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QUARTERLY REPORT
MARCH - MAY 1975
FOR
RIO BLANCO OIL SHALE PROJECT
AQUATIC BASELINE STUDIES

SUBMITTED TO
LIMNETICS, INCORPORATED
DENVER, COLORADO

SUBMITTED BY

ECOLOGICAL SCIENCES DIVISION

NUS CORPORATION
PITTSBURGH, PENNSYLVANIA
HOUSTON, TEXAS
AND
DENVER, COLORADO

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PREPARED BY Thomas M. Ivory
Thomas M. Ivory
Project Manager

APPROVED BY Paul V. Morgan
Paul V. Morgan
Vice President
Ecological Sciences

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PREFACE

On September 9, 1974, NUS Corporation was selected by the Rio Blanco Oil Shale Project (RBOSP) and Limnetics, Incorporated to perform the Aquatic Baseline Data Accumulation Program for federal Oil Shale Tract C-a. On October 15, 1974, the aquatic sampling program was initiated; during March 1975, NUS submitted the initial quarterly data report covering the period October 1974 - January 1975. This report constitutes the second quarterly data report submitted to Limnetics, Incorporated. In addition to data from April 1975, the report includes those data from the December 1974 - January 1975 period which were not analyzed at the time the initial quarterly report was submitted. The intent of this report is to present the data accumulated and analyzed since the initial quarterly report. Only limited interpretation of the data has been incorporated with the data.

2.4 AQUATIC STUDIES

2.4.0 Introduction

2.4.0.1 Program Objectives

The Aquatic Baseline Data Accumulation Program is designed to incorporate the environmental studies described in the Federal Register, Volume 39, Number 230, Part 3, Oil Shale Lease Environmental Stipulations and in the Tract C-a Exploratory Plan of May 1974. The overall objective for the aquatic program is to characterize the existing aquatic ecological communities in the vicinity of Tract C-a. These baseline studies will inventory the aquatic habitats which may be affected by the development of oil shale on and around Tract C-a; and will allow determination of species composition, productivity, importance to man, and relative uniqueness of aquatic habitats and species. The aquatic baseline program includes the collection and analysis of field data and an on-going survey of pertinent literature. Since most of the streams on and near Tract C-a are intermittent and since most of the permanent aquatic ecosystems occur off tract, characterization of the permanent streams will be emphasized.

2.4.0.2 Sampling Locations

The sites of the various sampling stations have been chosen to represent the broadest possible range of aquatic habitats available. A total of 35 sampling stations has been established. Because emphasis in this aquatic program has been given to the permanent streams near Tract C-a, 18 of the stations are located on the White River and Yellow Creek (near its confluence with the White River). The locations of the aquatic sampling stations are depicted in Figure 2.4-1 (p. 2.4-2). The description of each of these locations, presented in detail in Section 2.4.1 of the April 1975 RBOSP Quarterly Report, will not be repeated here. For convenience and ease of discussion, the sampling stations will be treated according to their geographical locations in the following manner: stations near the headwater areas west of Tract C-a (Stations 1 - 5); stations on Tract C-a (Stations 6 - 18); stations on Yellow Creek (Stations 19 - 22); and stations on the White River (Stations 23 - 35).

2.4.0.3 Schedule

The original and revised schedules of events for the RBOSP Aquatic Baseline Data Accumulation Program are presented as Tables 2.4-1 and 2.4-2 (pp 2.4-3 and 2.4-4), respectively. (The original schedule for the aquatic program was revised in order to intensify sampling frequency during the period when biological activity is greatest.) The initial sampling was begun in October 1974; and sampling will continue, in accordance with the Revised Schedule, through August 1976. At each sampling location all physical, chemical, and biological samples are obtained on the same day. Appendix B-1-1 lists the dates on which samples were collected in December 1974 -

Figure 2.4.-1

RBOSP

AQUATIC SAMPLING LOCATIONS

▲ – Aquatic baseline study sampling locations

| – Multiple aquatic baseline study sampling locations

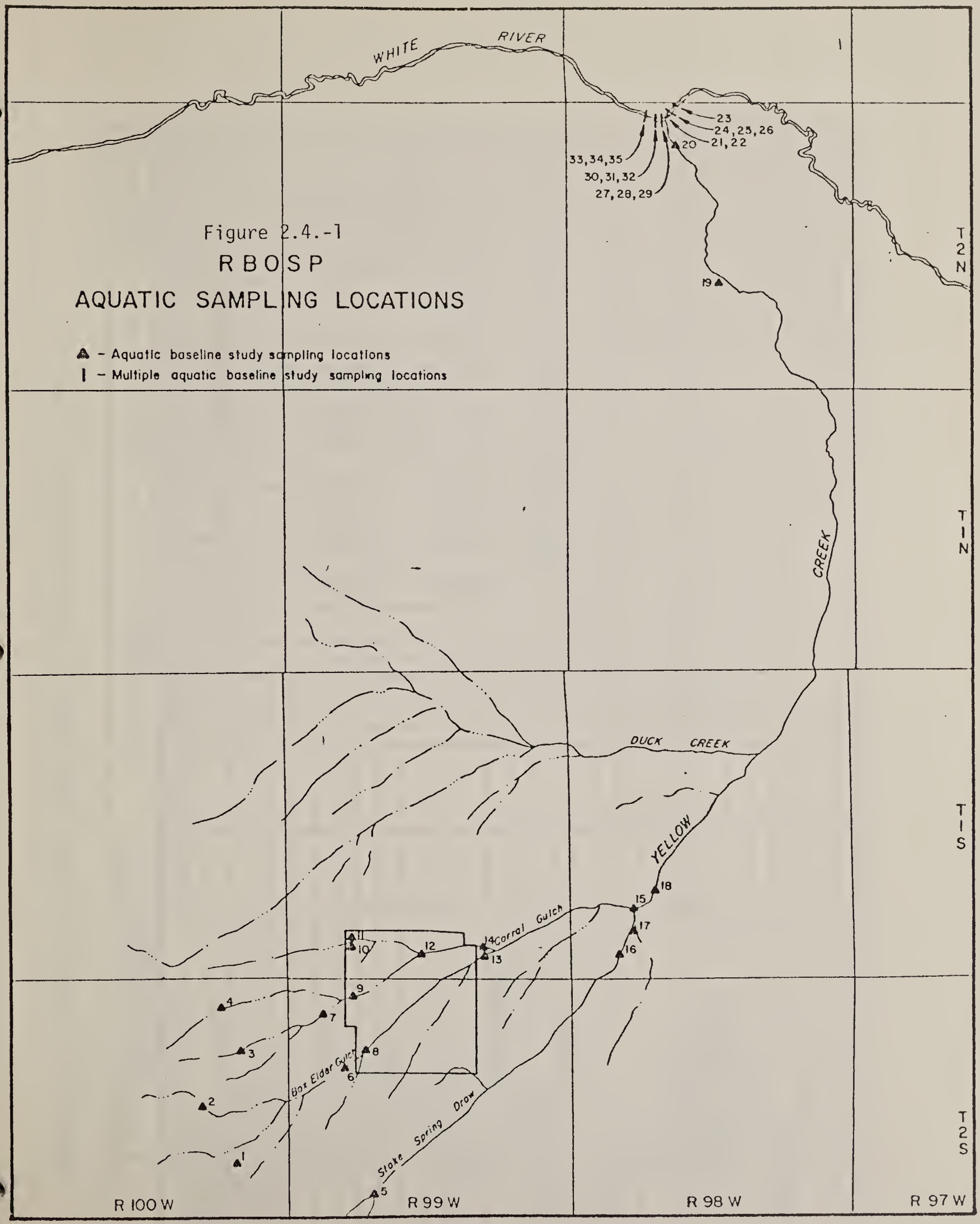

Table 2.4-1. Schedule for RBOSP Aquatic Baseline Data Accumulation Program

RIO BLANCO OIL SHALE PROJECT (GULF-STANDARD)

SPECIFICATION TASK	START	COMP.
START DATE		•
PERIOD OF PERFORMANCE		
START-UP TIME		
STUDY SCHEDULE		
FIELD STUDIES		
PHYSICAL		
WATER CHEMISTRY		
PLANKTON		
PERIPHYTON		
PRIMARY PROD.		
ANALYSIS		
BENTHOS		
MACROPHYTES		
FISH		
RARE AND ENDANGERED		
SPECIES		
LAB ANALYSIS		
STATISTICAL ANALYSIS		
REPORTS		
MONTHLY		
ANNUAL		
DRAFT FINAL		
COMMENT PERIOD		
INCORP. COMMENTS		
FINAL REPORT		
MEETINGS		
BIMONTHLY		

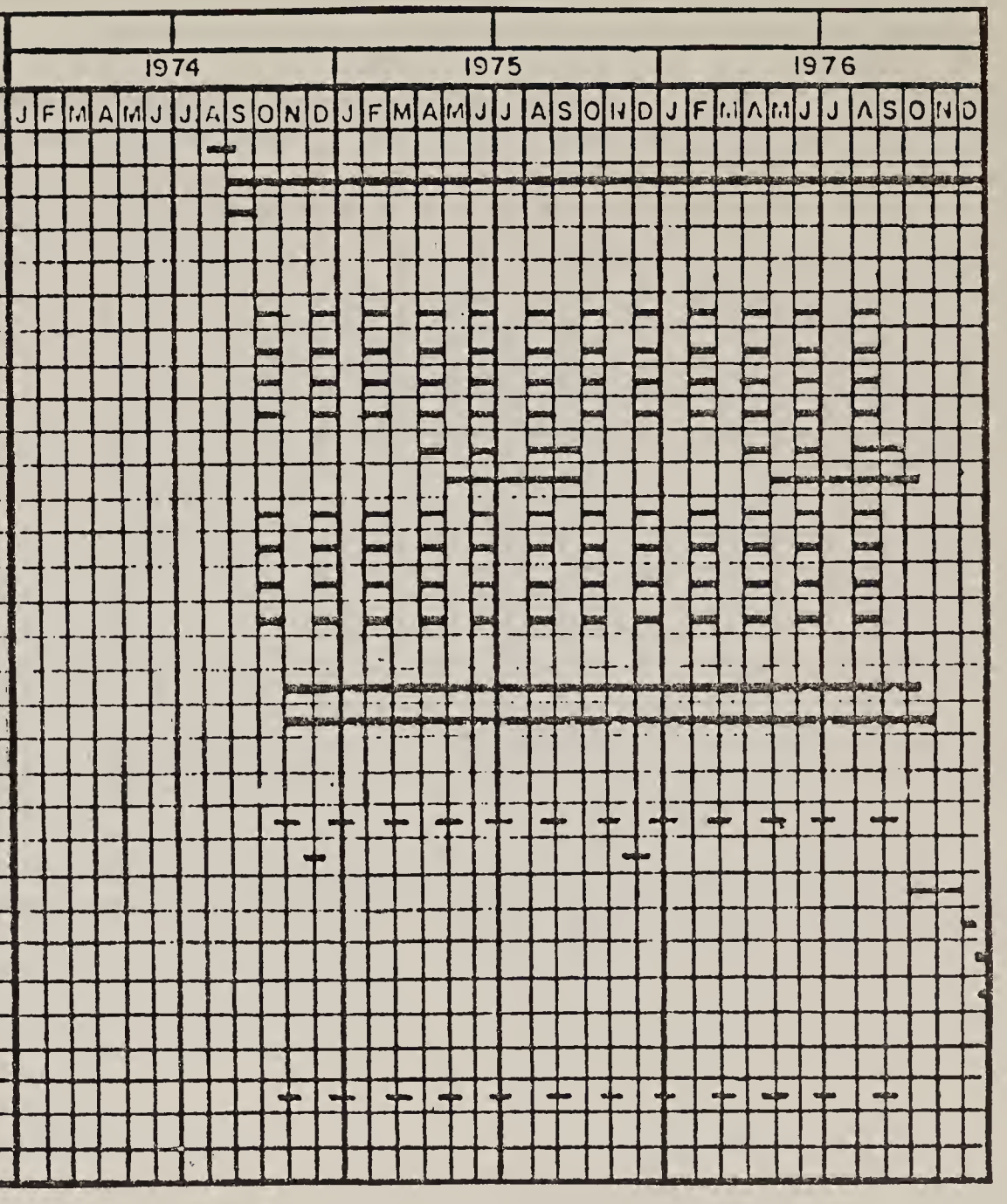

Table 2.4-2. Revised Schedule for RBOSB Aquatic Baseline Data Accumulation Program

RIO BLANCO OIL SHALE PROJECT (GULF-STANDARD)	1975												1976											
Specification Task	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Start Date																								
Period of Performance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Start-up Time																								
Study Schedule																								
Field Studies																								
Physical	X			X	X	X	X	X	X	X	X					X		X	X	X				
Water Chemistry	X			X	X	X	X	X	X	X	X					X		X	X	X				
Plankton	X			X	X	X	X	X	X	X	X					X		X	X	X				
Periphyton	X			X	X	X	X	X	X	X	X					X		X	X	X				
Primary Prod.																								
Analysis					X	X	X	X	X	X						X		X	X	X				
Benthos	X			X	X	X	X	X	X	X	X					X		X	X	X				
Macrophytes	X			X	X	X	X	X	X	X	X					X		X	X	X				
Fish	X			X	X	X	X	X	X	X	X					X		X	X					
Rare and Endangered Species	X			X	X	X	X	X	X	X	X					X		X	X	X				
Springs and Seepages	X	X		X	X	X	X	X	X	X	X		X		X		X		X	X	X				
Miscellaneous Studies				X		X		X		X		X		X										
Lab Analysis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Statistical Analysis	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Reports																								
Monthly	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Quarterly			X			X			X			X			X			X			X			
Annual	X																							
Draft Final																						X		
Comment Period																							X	
Incorp. Comments																							X	
Final Report																							X	
Meetings																								
Bimonthly			X		X		X		X		X		X		X		X		X					

January 1975, while Appendix B-1-2 lists the sampling dates for April 1975. During both sampling periods discussed herein, physical conditions (dry or frozen streams or deep snow accumulations) hampered or prevented sample collection. During December 1974 - January 1975 samples were obtained at a total of 24 locations, whereas during April 1975 samples were collected at 27 locations.

2.4.0.5 Report Motif

In the following paragraphs the presentation of results obtained during the December - January sampling period (which were not included in RBOSP Progress Report-2) and during the April sampling period has been limited to a preliminary description of the data, and, in the case of the physical and chemical parameters, only a limited number of selected parameters are discussed. No formal data interpretations will be attempted until one year of aquatic baseline data has been accumulated.

2.4 Aquatic Studies

APPENDIX B-1-1

DATES FOR SAMPLING FOR
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-1-1

DATES OF SAMPLING FOR RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

Station	Date Sampled	Flow Condition
1	1-10-75	Inaccessible
2	1-10-75	Inaccessible
3	1-15-75	Flowing
4	1-14-75	Flowing
5	1-16-75	Flowing
6	1-10-75	Dry
7	1-10-75	Frozen
8	1-10-75	Flowing
9	1-10-75	Flowing
10	12- 9-74	Dry
11	12- 9-74	Dry
12	12- 9-74	Dry
13	12- 9-74	Flowing
14	1- 6-75	Flowing
15	12- 9-74	Frozen
16	12- 9-74	Dry
17	12- 9-74	Dry
18	12- 9-74	Frozen
19	1- 6-75	Flowing
20	12- 4-74	Flowing (Ice covered)
21	12- 4-74	Flowing (Ice covered)
22	12- 4-74	Flowing (Ice covered)
23	12-10-74	Flowing (Ice covered)
24	12- 5-74	Flowing (Ice covered)
25	12- 5-74	Flowing (Ice covered)
26	12- 5-74	Flowing (Ice covered)
27	12- 2-74	Flowing (Ice covered)
28	12- 2-74	Flowing (Ice covered)
29	12- 2-74	Flowing (Ice covered)
30	12- 3-74	Flowing (Ice covered)
31	12- 3-74	Flowing (Ice covered)
32	12- 3-74	Flowing (Ice covered)
33	12-10-74	Ice covered
34	12-10-74	Flowing (Ice covered)
35	12-10-74	Flowing (Ice covered)

APPENDIX B-1-2

DATES OF SAMPLING FOR
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-1-2

DATES OF SAMPLING FOR RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

Station	Date Sampled	Flow Condition
1	4-17-75	Flowing
2	4-10-75	Flowing
3	4-15-75	Flowing
4	4-15-75	Flowing
5	4- 9-75	Flowing
6	4- 9-75	Dry
7	4-15-75	Flowing
8	4-10-75	Flowing
9	4- 8-75	Flowing
10	4- 8-75	Dry
11	4- 8-75	Dry
12	4- 8-75	Dry
13	4- 9-75	Flowing
14	4- 9-75	Flowing
15	4- 9-75	Dry
16	4- 9-75	Dry
17	4- 9-75	Dry
18	4- 9-75	Dry
19	4-11-75	Flowing
20	4-30-75	Flowing
21	4-30-75	Flowing
22	4-30-75	Flowing
23	4-26-75	Flowing
24	4-24-75	Flowing
25	4-24-75	Flowing
26	4-24-75	Flowing
27	4-22-75	Flowing
28	4-22-75	Flowing
29	4-21-75	Flowing
30	4-23-75	Flowing
31	4-23-75	Flowing
32	4-23-75	Flowing
33	4-25-75	Flowing
34	4-25-75	Flowing
35	4-25-75	Flowing

2.4.1 Physical and Chemical Characteristics

2.4.1 Physical Measurements and Water Chemistry

2.4.1.1 Objectives

The objectives of this segment of the aquatic studies include the determination of certain physical characteristics of the streams at each sampling station and the correlation of these characteristics with the chemical and biological data collected. In addition, this segment of the studies provides for the determination of concentrations of certain chemicals which may be of particular biological significance and correlation of these chemical data with the physical and biological data collected at the same time.

2.4.1.2 Methods

Water Flow

Duplicate samples are collected for the analysis of certain chemical characteristics of particular biological importance. These characteristics include alkalinity, calcium, chloride, total hardness, magnesium, nitrate, nitrite, ammonia, Kjeldahl nitrogen, orthophosphate, total phosphate, potassium, dissolved silica, sodium, sulfate, dissolved organic carbon, total organic carbon, suspended solids, and total dissolved solids.

Table 2.4-3 (2.4-7) presents the analytical methods, limits of detection, and methods of preservation for the aforementioned analyses as well as for the sediment analyses discussed in Section 2.4.6. Since Progress Report-2, the method of preserving magnesium, potassium, silica, sodium, dissolved organic carbon, and total organic carbon has changed from the addition of HNO_3 to the addition of HCl.Except for the use of the specific ion electrode for ammonium and Kjeldahl nitrogen determination, the analytical methods given in Table 2.4-3 (p 2.4-7) are specified in the Federal Register, Volume 38, Number 199, of October 16, 1973.

2.4.1.3 Results

Detailed presentations of the physical and chemical data collected during the April 1975 sampling period are included in Appendices B-2-1 and B-3-1. A summary of selected parameters is presented below.

The physical and chemical data obtained from the White River (Stations 23 - 35) and Yellow Creek (Stations 19 - 22) during April are generally within the same ranges of concentration reported by the USGS (1971, 1972, 1973) and by Everhart and May (1973) (refer to section 2.4.0 of Progress Report-2 for their findings). The exceptions were the pH values in the White River (which were slightly higher than previously observed) and values for total alkalinity and sulfate in Yellow Creek (which were lower than the 1420 to 1460 mg/l total alkalinity and 554 to 570 mg/l sulfate found by Everhart and May during the April - May period of 1969). The high turbidity values

Table 2.4-3. Water chemistry, Analytical Laboratory Methodology. RBOSP Aquatic Baseline Studies.

Parameter	Measurement Methodology[1]	Detection Limit (ppm)[2]	Sample Preservation
Alkalinity, total	Colorimetric	2	None required
Ammonia nitrogen	Electrode	0.10	$HgCl_2$
Calcium, dissolved	Atomic absorption	0.02	None required
Chloride, dissolved	Potentiometric	0.4	None required
Hardness, total	EDTA Titration	2	None required
Magnesium, dissolved	Atomic absorption	0.005	HCl
Kjeldahl nitrogen	Kjeldahl digestion	0.10	$HgCl_2$
Nitrate, dissolved	Brucine	0.02	$HgCl_2$
Nitrite, dissolved	Diazotization	0.01	$HgCl_2$
Phosphate, ortho (dissolved)	Ammonium molybdate - potassium antimonyl tartrate	0.005	$HgCl_2$
Phosphate, total	Same as orthophosphate	0.01	$HgCl_2$
Potassium, dissolved	Atomic absorption	0.01	HCl
Silica, dissolved	Molybdosilicate	0.005	HCl
Sodium, dissolved	Atomic absorption	0.005	HCl
Sulfate, dissolved	Gravimetric	0.30	Refrigeration
Carbon, dissolved organic	Beckman TOC Analyzer	2	HCl
Carbon, total organic	Beckman TOC Analyzer	2	HCl
Solids, suspended	Filtration	1	None required
Solids, total dissolved	Filtration and evaporation	1	None required
	SEDIMENT CHEMISTRY[3]		
Arsenic	Extraction and Atomic absorption	1.	Refrigeration
Aluminum	Extraction and Atomic absorption	10	Refrigeration
Herbicide	Gas Chromatography	100ppb	Refrigeration
Lead	Extraction and Atomic absorption	0.5	Refrigeration
Mercury	Extraction and Atomic absorption	0.02	Refrigeration
Nitrogen, total Kjeldahl	Kjeldahl digestion - Electrode	10	Refrigeration
Phosphate, total	Persulfate digestion	0.25	Refrigeration
Solids, total volatile	Filtration, evaporation volatilization	10	Refrigeration
Zinc	Extraction and Atomic absorption	0.5	Refrigeration

[1]Methods are those specified in the Federal Register, Vol. 38, No. 199, Oct. 16, 1973 except for use of specific ion electrode.

[2]For water samples, this detection limit is the minimum concentration which will be reported on natural and treated water samples (99.99% H_2O) with the indicated method and using a sample of defined size.

[3]Detection limits vary with sample size

during April 1975 were undobtedly a result of spring run-off. Dissolved oxygen concentrations remained high during this period of cold temperatures and increased flow. The ranges of chemical characteristics as observed during April are as follows:

	White River	Yellow Creek
Specific conductance (micromhos)	630 - 850	2500 - 3700
pH	8.2 - 8.5	8.5 - 8.6
Alkalinity, total $CaCO_3$ (mg/l)	169 - 211	707 - 1306
Chloride (mg/l)	24 - 39	26 - 110
Sulfate (mg/l)	48 - 71	194 - 291
Dissolved solids (mg/l)	453 - 644	2000 - 2500
Turbidity (JTU)	42 - 110	65 - 86
Dissolved oxygen (mg/l)	8.3 - 10.1	7.9 - 11.4
Temperature (^{o}C)	10 - 15	10 - 14

APPENDIX B-2-1

PHYSICAL AND CHEMICAL CHARACTERISTICS OF STREAMS
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-2-1

PHYSICAL AND CHEMICAL CHARACTERISTICS OF STREAMS
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975[1]

STATION	CHARACTERISITC					
	WATER TEMPERATURE (^{o}C)	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN (mg/l)	ALKALINITY Total (mg/l as $CaCO_3$)	ALKALINITY Phth. (mg/l as $CaCO_3$)	Ph
1	6	875	8.7	0	278	7.7
2	10	1200	7.5	0	372	8.0
3	5	850	8.8	0	226	8.2
4	11	1250	9.1	0	433	8.0
5	7	1450	14.3	25	415	8.6
7	12	950	7.8	22	283	8.6
8	12	1100	10.5	0	375	8.4
9	10	1250	10.1	10	390	8.2
13	9	1730	5.2	25	716	8.3
14	5	1800	11.1	0	492	8.4
19	14	2700	11.4	47	707	8.6
20	14	3700	9.4	104	1291	8.6
21	14	3700	8.9	104	1306	8.6
22	10	2500	7.9	126	1302	8.5
23	10	675	8.4	15	169	8.4
24	11	760	9.1	13	180	8.3
25	11	775	8.8	15	176	8.3
26	11	775	8.7	13	179	8.3
27	15	850	9.8	28	207	8.5

[1]Stations 6,10-12, and 15-18 were dry at time of sampling

APPENDIX B-2-1 (Continued)

STATION	CHARACTERISITC					
	WATER TEMPERATURE (^{o}C)	CONDUCTIVITY (µmhos/cm)	DISSOLVED OXYGEN (mg/l)	ALKALINITY Total(mg/l as $CaCO_3$	ALKALINITY Phth.(mg/l as $CaCO_3$	Ph
28	13	YC[2] 1800 WR[2] 800-820	9.4	27	211	8.4
29	13	850	10.1	35	207	8.4
30	12	770	8.5	17	179	8.4
31	12	720	8.6	17	174	8.4
32	12	770	8.3	22	200	8.4
33	14	630	9.1	15	173	8.2
34	14	630	8.8	18	169	8.2
35	14	630	8.7	18	170	8.2

2.4.1.156

[2] YC = Yellow Creek
WR = White River

RBOSP PROGRESS REPORT

APPENDIX B-2-1 (Continued)

STATION	CHARACTERISTIC					
	TURBIDITY JTU	COLOR (APHA Units)	ODOR[3]	SUBSTRATE[4]	WIDTH	DEPTH (In)
						s; m; s
1	1	10 - 20	ND	Gr,Si	--	--
2	8	10 - 20	ND	Gr	13"	1"
3	37	10 - 20	ND	Gr	5"	1"
4	2	0 - 5	ND	Gr,Sa	19"	1"
5	1	5 - 10	ND	Gr,Si	40"	2"; 1
7	445	10 - 20	ND	Gr,Sa	10"	1"
8	2	0 - 5	ND	Gr,Sa	17"	1"
9	2	0 - 5	ND	Gr	11"	1"
13	<1000	10 - 20	ND	Gr,Si	36"	3"
14	9	5 - 10	ND	Si	3"	2"
19	19	10 - 20	ND	Gr,D	18"	6"
20	81	20 - 30	ND	Gr,Si,Sa	12'	4"; 3"
21	68	5 - 10	ND	Gr,Si	5' 5"	5"; 3"
22	69	10 - 20	ND	Gr,Sa	6' 3"	4"; 8"
23	65	10 - 20	ND	Co,Gr	31'	4";20"; 8"
24	90	20 - 30	ND	Co,Gr	136'	3";10";24"
25	93	20 - 30	ND	Co,Gr	136'	26";28";19"
26	95	10 - 30	ND	Co,Gr	136'	16";13"; 2"
27	44	10 - 20	ND	Gr,Si	46' 6"	2";23"; 4"

[3]ND = Not Detectable

[4]Cl = Clay Gr = Gravel
Co = Cobbles Sa = Sand
D = Detritus Si = Silt

[5]Measurements taken at each side (s) and in the middle (m) of the stream

RBOSP PROGRESS REPORT

APPENDIX B-2-1 (Continued)

STATION	CHARACTERISTIC					
	TURBIDITY JTU	COLOR (APHA Units)	ODOR	SUBSTRATE	WIDTH	DEPTH (In)
						s; m; s
28	47	10 - 20	ND	Gr,Sa	74' 5"	1"; 8"; 1"
29	53	5 - 10	ND	Gr,D	20'10"	1";11"; 1"
30	92	5 - 10	ND	Co,Gr	150'	2";16";18"
31	89	20 - 30	ND	Co,Gr	150'	18";20";14"
32	98	20 - 30	ND	Co,Gr	150'	15";21"; 4"
33	70	20 - 30	ND	Gr,Sa	41'	1";30"; 2"
34	70	10 - 20	ND	Gr,Sa	44'	14";16"; 1"
35	66	10 - 30	ND	Gr,Sa	58'	2";24"; 1"

RBOSP PROGRESS REPORT

APPENDIX B-3-1

WATER CHEMISTRY DATA
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-3-1

WATER CHEMISTRY DATA. RBOSP AQUATIC BASELINE STUDIES
APRIL 1975. (Data are expressed in mg/l unless other wise noted.) [1,2]

STATION REPLICATE	PARAMETER					
	AMMONIA (N)	CALCIUM (Ca)	ORGANIC CARBON(C) DISSOLVED	TOTAL ORGANIC CARBON(C)	CHLORIDE (Cl)	COLOR (APHA)
1-A	<0.1	95	19	23	5.9	10-20
1-B	<0.1	95	20	23	5.8	10-20
2-A	<0.1	102	9	23	6.1	10-20
2-B	<0.1	102	15	21	6.3	10-20
3-A	<0.1	52	12	18	5.1	10-20
3-B	<0.1	52	16	25	5.3	10-20
4-A	<0.1	110	20	26	6.4	0-5
4-B	<0.1	110	19	23	6.4	0-5
5-A	<0.1	102	15	21	11.0	5-10
5-B	<0.1	101	18	22	11.0	5-10
7-A	<0.1	68	14	19	6.4	10-20
7-B	<0.1	68	15	19	5.8	10-20
8-A	<0.1	84	15	15	6.4	0-5
8-B	<0.1	84	16	17	6.6	0-5
9-A	<0.1	88	16	15	7.5	0-5
9-B	<0.1	88	16	16	7.3	0-5

1 Stations 6, 10-12, 15-18 were dry at the time of sampling.
2 Data for color are APHA units, all other data are expressed in mg/l.

APPENDIX B-3-1 (Continued)

STATION REPLICATE	AMMONIA (N)	CALCIUM (Ca)	ORGANIC CARBON(C) DISSOLVED	TOTAL ORGANIC CARBON(C)	CHLORIDE (Cl)	COLOR (APHA)
13-A	<0.1	54	40	91	9.6	10-20
13-B	<0.1	54	40	91	9.6	10-20
14-A	<0.1	100	27	34	16	5-10
14-B	<0.1	100	31	34	17	5-10
19-A	<0.1	56	50	54	26	10-20
19-B	<0.1	56	50	54	26	10-20
20-A	<0.1	14	33	33	100	20-30
20-B	<0.1	14	32	33	110	20-30
21-A	<0.1	16	17	33	110	5-10
21-B	<0.1	16	22	28	110	5-10
22-A	<0.1	18	17	23	110	10-20
22-B	<0.1	18	22	23	110	10-20
23-A	<0.1	64	5	8	24	10-20
23-B	<0.1	64	5	7	25	10-20
24-A	<0.1	64	7	7	27	20-30
24-B	<0.1	64	4	11	27	20-30
25-A	<0.1	66	4	12	28	20-30
25-B	<0.1	66	4	12	28	20-30

RBOSP PROGRESS REPORT

APPENDIX B-3-1 (Continued)

STATION REPLICATE	AMMONIA (N)	CALCIUM (Ca)	ORGANIC CARBON(C) DISSOLVED	TOTAL ORGANIC CARBON(C)	CHLORIDE (Cl)	COLOR (APHA)
26-A	<0.1	66	5	12	28	20-30
26-B	<0.1	64	6	8	28	10-30
27-A	<0.1	68	3	4	33	10-20
27-B	<0.1	68	2	4	33	10-20
28-A	<0.1	68	4	5	32	10-20
28-B	<0.1	68	2	6	33	10-20
29-A	<0.1	58	4	7	39	5-10
29-B	<0.1	58	5	6	39	5-10
30-A	<0.1	66	2	6	32	5-10
30-B	<0.1	66	4	7	30	5-10
31-A	<0.1	66	13	20	30	20-30
31-B	<0.1	66	13	19	30	20-30
32-A	<0.1	64	15	22	31	20-30
32-B	<0.1	64	17	19	31	20-30
33-A	<0.1	62	17	16	26	20-30
33-B	<0.1	62	16	19	27	20-30
34-A	<0.1	62	18	23	28	10-20
34-B	<0.1	60	16	19	27	10-20
35-A	<0.1	60	16	24	27	20-30
35-B	<0.1	60	12	16	27	10-20

RBOSP PROGRESS REPORT

APPENDIX B-3-1 (Continued)

STATION REPLICATE	PARAMETER							
	HARDNESS ($CaCO_3$)	MAGNESIUM (Mg)	NITRATE (N)	NITRITE (N)	KJELDAHL NITROGEN (N)	ODOR[3]	ORTHO-PHOSPHATE (P)	TOTAL PHOSPHATE (P)
1-A	410	45	2.0	<0.01	0.29	ND	0.01	0.01
1-B	420	45	2.0	<0.01	0.27	ND	0.03	0.03
2-A	480	52	1.0	0.02	0.37	ND	<0.01	0.04
2-B	480	52	1.1	0.03	0.32	ND	<0.01	0.03
3-A	260	31	<0.2	<0.01	0.52	ND	0.02	0.16
3-B	260	31	<0.2	<0.01	0.57	ND	0.02	0.09
4-A	460	59	1.4	<0.01	0.27	ND	0.01	0.03
4-B	460	59	1.3	<0.01	0.24	ND	0.01	0.03
5-A	560	80	0.2	<0.01	0.52	ND	<0.01	0.04
5-B	570	80	<0.2	<0.01	0.57	ND	<0.01	0.02
7-A	380	54	0.6	<0.01	0.16	ND	<0.01	0.18
7-B	390	50	0.6	<0.01	0.19	ND	<0.01	0.20
8-A	410	58	0.6	<0.01	0.24	ND	<0.01	0.03
8-B	420	58	0.6	<0.01	0.25	ND	<0.01	0.03
9-A	450	62	0.6	<0.01	0.21	ND	<0.01	0.02
9-B	450	64	0.6	<0.01	0.21	ND	<0.01	0.02
13-A	360	58	0.2	<0.01	0.36	ND	0.04	2.1
13-B	360	50	0.2	<0.01	3.20	ND	0.04	1.9

3 ND = not detectable

APPENDIX B-3-1 (Continued)

STATION REPLICATE	PARAMETER							
	HARDNESS ($CaCO_3$)	MAGNESIUM (Mg)	NITRATE (N)	NITRITE (N)	KJELDAHL NITROGEN (N)	ODOR[3]	ORTHO-PHOSPHATE (P)	TOTAL PHOSPHATE (P)
14-A	590	104	0.6	<0.01	0.47	ND	<0.01	0.02
14-B	600	106	0.6	<0.01	0.34	ND	<0.01	0.08
19-A	670	180	<0.2	<0.01	0.44	ND	0.05	0.09
19-B	670	184	<0.2	<0.01	0.69	ND	0.05	0.08
20-A	590	122	0.7	<0.01	0.67	ND	<0.01	0.14
20-B	590	126	0.7	<0.01	0.67	ND	<0.01	0.13
21-A	570	130	0.8	<0.01	0.73	ND	<0.01	0.11
21-B	570	128	0.8	<0.01	0.59	ND	<0.01	0.08
22-A	550	126	1.0	<0.01	0.59	ND	<0.01	0.08
22-B	550	134	1.0	<0.01	0.73	ND	<0.01	0.08
23-A	280	22	<0.2	<0.01	0.98	ND	0.02	0.27
23-B	280	22	<0.2	<0.01	0.90	ND	<0.01	0.22
24-A	290	24	<0.2	<0.01	0.73	ND	0.01	0.28
24-B	290	24	<0.2	<0.01	0.86	ND	<0.01	0.33
25-A	280	24	<0.2	<0.01	0.77	ND	0.01	0.28
25-B	280	24	<0.2	<0.01	0.77	ND	<0.01	0.28
26-A	280	24	<0.2	<0.01	0.61	ND	0.01	0.30
26-B	280	24	<0.2	<0.01	0.74	ND	<0.01	0.26

3 ND = not detectable

RBOSP PROGRESS REPORT

APPENDIX B-3-1 (Continued)

STATION REPLICATE	PARAMETER							
	HARDNESS ($CaCO_3$)	MAGNESIUM (Mg)	NITRATE (N)	NITRITE (N)	KJELDAHL NITROGEN (N)	ODOR[3]	ORTHO-PHOSPHATE (P)	TOTAL PHOSPHATE (P)
27-A	290	26	<0.2	<0.01	0.33	ND	<0.01	0.09
27-B	290	26	<0.2	<0.01	0.48	ND	<0.01	0.09
28-A	280	26	<0.2	<0.01	0.43	ND	<0.01	0.14
28-B	280	26	<0.2	<0.01	0.33	ND	0.01	0.10
29-A	280	32	<0.2	<0.01	0.43	ND	<0.01	0.09
29-B	280	32	<0.2	<0.01	0.44	ND	<0.01	0.09
30-A	290	26	<0.2	<0.01	0.74	ND	<0.01	0.23
30-B	290	26	<0.2	<0.01	0.87	ND	0.01	0.20
31-A	290	26	<0.2	<0.01	0.70	ND	0.01	0.26
31-B	290	26	<0.2	<0.01	0.66	ND	<0.01	0.16
32-A	290	28	<0.2	<0.01	0.70	ND	<0.01	0.16
32-B	290	28	<0.2	<0.01	0.56	ND	<0.01	0.16
33-A	280	22	<0.2	<0.01	0.62	ND	<0.01	0.17
33-B	280	22	<0.2	<0.01	0.54	ND	<0.01	0.20
34-A	280	22	<0.2	<0.01	0.54	ND	<0.01	0.18
34-B	280	22	<0.2	<0.01	0.49	ND	<0.01	0.18
35-A	270	22	<0.2	<0.01	1.20	ND	<0.01	0.17
35-B	270	22	<0.2	<0.01	1.20	ND	0.01	0.22

3 ND = not detectable

RBOSP PROGRESS REPORT

APPENDIX B-3-1 (Continued)

STATION REPLICATE	PARAMETER						
	POTASSIUM (K)	SOLUBLE SILICA (Si)	SODIUM (Na)	DISSOLVED SOLIDS	SUSPENDED SOLIDS	SULFATE (S)	TURBIDITY (JTU)
1-A	1.5	10.3	40	554	<1	37	0.6
1-B	1.4	10.2	40	545	1	36	1.0
2-A	1.7	10.0	83	758	62	85	9.2
2-B	1.7	9.4	83	768	42	85	6.8
3-A	2.3	5.7	66	476	176	50	35
3-B	2.4	5.7	68	480	365	51	39
4-A	2.8	8.3	93	851	7	87	1.6
4-B	2.3	8.3	92	858	4	88	2.4
5-A	4.3	5.3	142	1,000	6	137	1.3
5-B	4.3	5.5	142	1,000	1	137	1.1
7-A	2.5	8.7	81	643	355	71	440
7-B	2.3	8.8	82	643	285	73	450
8-A	2.5	9.0	90	706	2	72	1.6
8-B	2.5	8.8	90	740	4	72	3.1
9-A	3.3	8.4	108	842	25	93	1.6
9-B	3.3	7.6	108	847	19	94	2.1
13-A	4.4	8.5	350	1,200	1,900	79	>1.000
13-B	4.4	9.2	340	1,200	1,800	79	>1.000

RBOSP PROGRESS REPORT

APPENDIX B-3-1 (Continued)

STATION REPLICATE	PARAMETER						
	POTASSIUM (K)	SOLUBLE SILICA (Si)	SODIUM (Na)	DISSOLVED SOLIDS	SUSPENDED SOLIDS	SULFATE (S)	TURBIDITY (JTU)
14-A	5.1	7.3	180	1,300	29	172	12
14-B	5.2	6.4	180	1,300	20	171	6.5
19-A	9.1	6.1	380	2,000	21	291	25
19-B	9.0	6.5	380	2,000	16	270	13
20-A	7.4	5.0	740	2,400	491	204	86
20-B	7.4	5.1	740	2,400	504	203	75
21-A	7.6	5.1	740	2,500	165	196	70
21-B	7.5	5.2	720	2,400	137	199	65
22-A	7.3	5.5	720	2,400	190	194	68
22-B	7.4	5.4	720	2,400	179	198	70
23-A	2.5	6.3	48	454	190	50	62
23-B	2.5	6.3	48	453	218	48	67
24-A	2.7	6.1	60	475	312	56	88
24-B	2.7	6.1	60	484	309	55	92
25-A	2.7	6.1	60	477	321	56	96
25-B	2.7	6.1	58	474	308	54	89
26-A	2.7	6.1	58	496	342	53	97
26-B	2.7	5.8	58	495	300	56	93

RBOSP PROGRESS REPORT

APPENDIX B-3-1 (Continued)

STATION REPLICATE	PARAMETER						
	POTASSIUM (K)	SOLUBLE SILICA (Si)	SODIUM (Na)	DISSOLVED SOLIDS	SUSPENDED SOLIDS	SULFATE (S)	TURBIDITY (JTU)
27-A	2.7	5.7	69	533	114	61	42
27-B	2.8	5.8	68	527	133	61	46
28-A	2.8	5.7	68	522	156	61	48
28-B	2.7	5.7	68	525	139	60	45
29-A	3.1	5.8	111	628	125	71	53
29-B	3.2	5.8	115	644	126	70	53
30-A	2.8	5.8	62	516	304	60	92
30-B	2.8	5.8	64	513	302	60	91
31-A	2.8	5.9	62	517	319	59	88
31-B	2.8	5.8	69	511	252	59	89
32-A	2.9	5.8	77	549	384	62	110
32-B	2.9	5.8	76	538	298	63	86
33-A	2.6	6.2	58	477	295	51	74
33-B	2.6	6.2	58	472	232	53	65
34-A	2.6	6.1	58	467	301	52	75
34-B	2.6	6.2	58	467	265	53	64
35-A	2.6	6.2	58	478	218	53	65
35-B	2.6	6.1	56	463	234	52	66

RBOSP PROGRESS REPORT

2.4.2 Phytoplankton

2.4.2 Phytoplankton

2.4.2.1 Objectives

The object of this aspect of the RBOSP aquatic studies is to determine composition and abundance of phytoplankton at each aquatic sampling location. Phytoplankton studies will aid in characterizing the aquatic habitats on and near Tract C-a.

2.4.2.2 Methods

No change in methods has occurred since Progress Report-2. See section 2.4.2.2 of Progress Report-2 for specific methods used in phytoplankton studies.

2.4.2.3 Results

Phytoplankton species observed in the December 1974 - January 1975 collections are listed in Appendix B-4-1. The results from the laboratory analysis of the second replicate of December 1974 - January 1975 phytoplankton are presented in Appendix B-4-2 (results from the first replicate were reported in Appendices A-5-1 and A-5-2 of Progress Report-2). A total of 99 algal taxa was observed in the December - January collections (both replicates).

As a result of additional taxonomic study of the October - November 1974 and December - January phytoplankton, the following revisions in nomenclature have been made: organisms reported previously as Chrysidiastrum catenatum will be reported as Chrysidiastrum ocellatum; organisms reported previously as Rivularia sp. will be reported as Calothrix sp.; and organisms reported previously as Stephanodiscus tenuis will be reported as Thalassiosira fluviatilis.

During the December - January period, the diatoms were generally the most abundant algal group at all locations sampled. Analyses of all December - January samples indicate that at the headwater stations phytoplankton abundance was generally low and the most abundant organisms were diatoms. The most abundant species at these stations included Achnanthes minutissima, Navicula salinarum, and Nitzschia linearis,. At tract Stations 5 and 14, phytoplankton abundance was quite low. At tract Stations 8 and 9,, the most abundant species was Chrysidiastrum ocellatum (a species belonging to the Chrysophyceae), while diatoms were the most abundant organisms at other stations. The most abundant species included Chrysidiastrum ocellatum, Achnanthes minutissima and Navicula salinarum. Diatoms were the most abundant organisms at the Yellow Creek stations. The most abundant species in Yellow Creek included Cymbella affinis, Cyclotella meneghiniana, and Navicula salinarum. Phytoplankton abundance was much lower at Station 19 than at any of the other Yellow Creek sites. This low plankton density is probably related to stream velocity. Samples were taken at the outflow of a spring where low densities would be expected. In the White River, diatoms were the most abundant phytoplankton group and the most abundant species

was Diatoma vulgare. Other abundant species included Cymbella affinis, Synedra ulna, Nitzschia frustulum, and Gomphonema ventricosa. The results of the analysis of one replicate of the April 1975 phytoplankton collection are presented in Appendices B-5-1 and B-5-2.

To date a total of 123 algal taxa has been observed in the April collection. At most headwater stations, the diatom Achnanthes minutissima and an unidentified flagellate were generally abundant. At the tract stations, Achnanthes minutissima and an unidentified chlorophyte were moderately abundant. At Stations 9, Chrysidiastrum ocellatum was very abundant. Based on the data analyzed to date, phytoplankton density at Station 14 (a small pond area) was much greater than at the other tract stations during April. In Yellow Creek, phytoplankton species composition and abundance at Station 19 was somewhat different from that found at Stations 20 and 22 and the phytoplankton density at Station 21 was quite low. The most abundant taxa in Yellow Creek included: Surirella ovata, Cyclotella meneghiniana, Navicula pelliculosa, Rhodomonas minuta, and an unidentified chlorophyte. In the White River, the diatoms Navicula viridula and Thalassiosira fluviatilis were abundant at all stations. At Station 33, more Cyanophyta (blue-green algae) were observed than at other stations. At Station 31, the diatom Gomphonema ventricosum was very abundant.

APPENDIX B-4-1

ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-4-1

ALGAL TAXA OBSDRVED IN THL PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES, DECEMBER 1974 - JANUARY 1975

CYANOPHYTA

Anabaena sp.
Calothrix epiphytica
Calothrix sp.
Chroococcus limneticus
Lyngbya sp.
Oscillatoria tenuis
Oscillatoria sp.
Schizothrix calcicola
Schizothrix sp.

CHLOROPHYTA

Ankistrodesmus falcatus
Chlamydomonas globosa
Cladophora sp.
Closterium parvulum
Micractinium pusillum
Oedogonium sp.
Pandorina morum
Scenedesmus quadricauda
Sphaerocystis schroeteri
Spirogyra sp.
Stigeoclonium sp.
Ulothrix zonata
Ulothrix sp.
Unidentified chlorophyte
Unidentified flagellate

CRYPTOPHYTA

Cryptomonas erosa
Rhodomonas minuta

EUGLENOPHYTA

Euglena proxima
Euglena sp.
Trachelomonas pulchella
Trachelomonas volvocina

APPENDIX

CHRYSOPHYTA

Achnanthes lanceolata
Achnanthes minutissima
Amphora ovalis
Amphora ovalis var. pediculus
Caloneis amphisbaena
Caloneis bacillum
Caloneis ventricosa
Chrysidiastrum ocellatum
Cocconeis pediculus
Cocconeis placentula
Cyclotella meneghiniana
Cylindrothece gracilis
Cymbella affinis
Cymbella cistula
Cymbella naviculoides
Cymbella sinuata
Cymbella ventricosa
Cymatopleura elliptica
Cymatopleura solea
Diatoma hiemale
Diatoma vulgare
Didymosphenia geminata
Epithemia sorex
Fragilaria construens
Fragilaria crotonensis
Fragilaria leptostauron
Fragilaria pinnata
Fragilaria vaucheriae
Gomphonema intricatum
Gomphonema olivaceum
Gomphonema ventricosum
Gyrosigma accuminatum
Hannaea arcus
Hantzschia amphioxys
Meridion circulare
Navicula arvensis
Navicula capitata
Navicula cryptocephala
Navicula cuspidata
Navicula minima
Navicula radiosa
Navicula pelliculosa
Navicula protracta
Navicula pupula
Navicula salinarum

RBOSP PROGRESS REPORT

Navicula tripunctata
Navicula viridula
Navicula sp. 1
Nitzschia acicularis
Nitzschia apiculata
Nitzschia baccata
Nitzschia chasei
Nitzschia dissipata
Nitzschia frustulum
Nitzschia gracilis
Nitzschia linearis
Nitzschia palea
Nitzschia sigma
Nitzschia sigmoidea
Nitzschia vermicularis
Pinnularia brebissonii
Rhoicosphenia curvata
Rhopalodia gibba
Surirella angustata
Surirella ovalis
Surirella ovata
Synedra amphicephala
Synedra pulchella
Synedra ulna
Thalassiosira fluviatilis

RBOSP PROGRESS REPORT

APPENDIX B-4-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING RBOSP AQUATIC BASELINE STUDIES DECEMBER 1974 - JANUARY 1975

APPENDIX B-4-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING RBOSP AQUATIC BASELINE STUDIES DECEMBER 1974 - JANUARY 1975. (Data are expressed as cells/ml.)[1]

	STATION / REPLICATE				
	3 / B	4 / B	5 / B	8 / B	9 / B
CYANOPHYTA					
Anabaena sp.					
Calothrix epiphytica					
Calothrix sp.					
Chroococcus limneticus					
Lyngbya sp.					
Oscillatoria tenuis					
Oscillatoria sp.					
Schizothrix calcicola					
Schizothrix sp.					
CHLOROPHYTA					
Ankistrodesmus falcatus					
Chlamydomonas globosa					
Cladophora sp.					
Closterium parvulum					
Micractinium pusillum					
Oedogonium sp.					
Pandorina morum					
Scenedesmus quadricauda					
Sphaerocystis schroeteri					

1 Stations 1, 2, 6, 7, 10-12, 15-18 and 27-29 were dry, in accessible or frozen at the time of sampling.

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	3 B	4 B	5 B	8 B	9 B
Spirogyra sp.		1			
Stigeoclonium sp.	29				
Ulothrix zonata					
Ulothrix sp.		49			
Unidentified chlorophyte	21		11	94	32
Unidentified flagellate			42		
CRYPTOPHYTA					
Cryptomonas erosa	2		8		5
Rhodomonas minuta	3	8	22	27	16
EUGLENOPHYTA					
Euglena proxima	1				
Euglena sp.					
Trachelomonas pulchella					3
Trachelomonas volvocina	1			3	
CHRYSOPHYTA					
Achnanthes minutissima	35	481	68	319	186
Achnanthes lanceolata		49	4	11	
Amphora ovalis					
Amphora ovalis var. pediculus		8	5		
Caloneis amphisbaena					
Caloneis bacillum					
Caloneis ventricosa					
Chrysidiastrum ocellatum		40		2,217	254
Cocconeis pediculus	1				
Cocconeis placentula					

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	3 B	4 B	5 B	8 B	9 B
Cyclotella meneghiniana		5			
Cymbella affinis		14		5	3
Cymbella cistula					
Cymbella naviculoides			3		3
Cymbella sinuata					
Cymbella ventricosa					
Cymatopleura elliptica					
Cymatopleura solea					
Diatoma hiemale	24				
Diatoma vulgare					
Didymosphenia geminata					
Epithemia sorex	1	19		3	14
Fragilaria construens		19	1		
Fragilaria crotonensis		100			
Fragilaria leptostauron					
Fragilaria pinnata				3	
Fragilaria vaucheriae					5
Gomphonema intricatum	1		9	11	
Gomphonenma olivaceum			4	5	5
Gomphonema ventricosum					
Gyrosigma acuminatum		5			
Hannaea arcus					
Hantzschia amphioxys					
Meridion circulare		84	3		
Navicula arvensis					
Navicula capitata					
Navicula cryptocephala		59			5
Navicula cuspidata					
Navicula minima			1		3

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	3 B	4 B	5 B	8 B	9 B
Navicula radiosa		8			
Navicula pelliculosa					
Navicula protracta			1		
Navicula pupula					
Navicula salinarum	2	105		5	19
Navicula tripunctata					
Navicula viridula		3			
Navicula sp. 1	2				
Nitzschia acicularis		24	1		
Nitzschia apiculata					3
Nitzschia baccata					
Nitzschia chasei					
Nitzschia dissipata					
Nitzschia frustulum	38	8	9	8	5
Nitzschia gracilis					
Nitzschia linearis	1	602		5	54
Nitzschia palea					
Nitzschia sigma					
Nitzschia sigmoidea					
Nitzschia vermicularis					
Pinnularia brebissonii	2				
Rhoicosphenia curvata					
Rhopalodia gibba					
Surirella angustata					
Surirella ovalis				3	
Surirella ovata		59		3	3
Synedra amphicephala			20		
Synedra pulchella					
Synedra ulna	4	11			5
Thalassiosira fluviatilis		11			

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	13 B	14 B	19 B	20 B	21 B
CYANOPHYTA					
Anabaena sp.					
Calothrix epiphytica					
Calothrix sp.					
Chroococcus limneticus					
Lyngbya sp.					
Oscillatoria tenuis					
Oscillatoria sp.					
Schizothrix calcicola					
Schizothrix sp.					
CHLOROPHYTA					
Ankistrodesmus falcatus				1	
Chlamydomonas globosa					
Cladophora sp.					
Closterium parvulum					
Micractinium pusillum					
Oedogonium sp.					
Pandorina morum					
Scenedesmus quadricauda				3	
Sphaerocystis schroeteri					

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	13 B	14 B	19 B	20 B	21 B
Spirogyra sp.					8
Stigeoclonium sp.					
Ulothrix zonata					
Ulothrix sp.					
Unidentified chlorophyte	4	9	17		38
Unidentified flagellate					
CRYPTOPHYTA					
Cryptomonas erosa	3	1	3		
Rhodomonas minuta	1	1	4		
EUGLENOPHYTA					
Euglena proxima					
Euglena sp.					
Trachelomonas pulchella					
Trachelomonas volvocina					
CHRYSOPHYTA					
Achnanthes minutissima	100	31	8	40	38
Achnanthes lanceolata	7	1			
Amphora ovalis	1				
Amphora ovalis var. pediculus					
Caloneis amphisbaena					
Caloneis bacillum					
Caloneis ventricosa					
Chrysidiastrum ocellatum	54				
Cocconeis pediculus			2		
Cocconeis placentula					

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	13 B	14 B	19 B	20 B	21 B
Cyclotella meneghiniana		1	1	429	478
Cymbella affinis		3		100	54
Cymbella cistula					
Cymbella naviculoides					
Cymbella sinuata					
Cymbella ventricosa				5	
Cymatopleura elliptica					
Cymatopleura solea					
Diatoma hiemale					
Diatoma vulgare	7		6		
Didymosphenia geminata					
Epithemia sorex		4			
Fragilaria construens	8				
Fragilaria crotonensis					
Fragilaria leptostauron				11	
Fragilaria pinnata				8	
Fragilaria vaucheriae			2	24	30
Gomphonema intricatum	4	1	1	16	8
Gomphonenma olivaceum	1	1		11	5
Gomphonema ventricosum	1				3
Gyrosigma acuminatum					
Hannaea arcus					
Hantzschia amphioxys				3	
Meridion circulare	1				
Navicula arvensis	3				
Navicula capitata					
Navicula cryptocephala	18		1	19	24
Navicula cuspidata					
Navicula minima					

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	13 B	14 B	19 B	20 B	21 B
Navicula radiosa					
Navicula pelliculosa			3		
Navicula protracta					
Navicula pupula					
Navicula salinarum	146	8	12	51	43
Navicula tripunctata					
Navicula viridula					
Navicula sp. 1					
Nitzschia acicularis	9				
Nitzschia apiculata				3	
Nitzschia baccata					
Nitzschia chasei					
Nitzschia dissipata			1		
Nitzschia frustulum	9	7	16		19
Nitzschia gracilis					
Nitzschia linearis	14		2		
Nitzschia palea	4				
Nitzschia sigma					
Nitzschia sigmoidea					
Nitzschia vermicularis					
Pinnularia brebissonii					
Rhoicosphenia curvata			2		
Rhopalodia gibba					
Surirella angustata					
Surirella ovalis			3		
Surirella ovata	1		4		
Synedra amphicephala	1	15	14		5
Synedra pulchella		1		32	11
Synedra ulna		2	1	3	5
Thalassiosira fluviatilis	3		3		

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	22 B	24 B	25 B	26 B	27 B
CYANOPHYTA					
Anabaena sp.					5
Calothrix epiphytica		14			
Calothrix sp.				3	
Chroococcus limneticus				22	
Lyngbya sp.			19		8
Oscillatoria tenuis					
Oscillatoria sp.				3	
Schizothrix calcicola					
Schizothrix sp.				16	
CHLOROPHYTA					
Ankistrodesmus falcatus					
Chlamydomonas globosa					
Cladophora sp.					
Closterium parvulum					
Micractinium pusillum				86	
Oedogonium sp.					
Pandorina morum					
Scenedesmus quadricauda					
Sphaerocystis schroeteri		22			

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	22 B	24 B	25 B	26 B	27 B
Spirogyra sp.					
Stigeoclonium sp.		1			
Ulothrix zonata		1			
Ulothrix sp.				1	
Unidentified chlorophyte	22	57	57	14	49
Unidentified flagellate					
CRYPTOPHYTA					
Cryptomonas erosa			5		
Rhodomonas minuta		3		16	
EUGLENOPHYTA					
Euglena proxima					
Euglena sp.					
Trachelomonas pulchella					
Trachelomonas volvocina					
CHRYSOPHYTA					
Achnanthes minutissima	81	5	16		
Achnanthes lanceolata					3
Amphora ovalis		3			
Amphora ovalis var. pediculus				3	3
Caloneis amphisbaena		3	3	8	3
Caloneis bacillum					3
Caloneis ventricosa					
Chrysidiastrum ocellatum					
Cocconeis pediculus		11	14	16	11
Cocconeis placentula					11
Cylindrothece gracilis		3	3		

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	22	24	25	26	27
	B	B	B	B	B
Cyclotella meneghiniana	543	16	16	19	30
Cymbella affinis	100	73	57	235	100
Cymbella cistula					
Cymbella naviculoides					
Cymbella sinuata					
Cymbella ventricosa					3
Cymatopleura elliptica					
Cymatopleura solea		3		3	
Diatoma hiemale					
Diatoma vulgare		626	583	688	756
Didymosphenia geminata					
Epithemia sorex		49	40	68	119
Fragilaria construens	8	22		8	27
Fragilaria crotonensis					
Fragilaria leptostauron		11	5	14	
Fragilaria pinnata		11	35	22	32
Fragilaria vaucheriae	19	8		14	5
Gomphonema intricatum	8	19	8	32	3
Gomphonenma olivaceum	5	35	22	57	73
Gomphonema ventricosum		76	46	103	73
Gyrosigma acuminatum					
Hannaea arcus					
Hantzschia amphioxys					
Meridion circulare					
Navicula arvensis					
Navicula capitata					3
Navicula cryptocephala	14	19	40	54	84
Navicula cuspidata					
Navicula minima					

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	22	24	25	26	27
	B	B	B	B	B
Navicula palea					59
Navicula radiosa					
Navicula pelliculosa		3	8		
Navicula protracta				3	
Navicula pupula					
Navicula salinarum	65	54	57	38	51
Navicula tripunctata	3	3	3	32	8
Navicula viridula		24		38	54
Navicula sp. 1					
Nitzschia acicularis		5			
Nitzschia apiculata	3				3
Nitzschia baccata				22	
Nitzschia chasei				3	
Nitzschia dissipata		5		40	59
Nitzschia frustulum		111	105	135	38
Nitzschia gracilis					
Nitzschia linearis		5	3	11	5
Nitzschia palea			3		84
Nitzschia sigma					
Nitzschia sigmoidea				3	3
Nitzschia vermicularis					
Pinnularia brebissonii					
Rhoicosphenia curvata				11	
Rhopalodia gibba					
Surirella angustata					
Surirella ovalis		3	3		
Surirella ovata		19	8	19	11
Synedra amphicephala			14	5	
Synedra pulchella	24				
Synedra ulna		224	192	235	130
Thalassiosira fluviatilis		38	14	22	59

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	28 B	29 B	30 B	31 B	32 B
CYANOPHYTA					
Anabaena sp.		5			
Calothrix epiphytica	16				
Calothrix sp.		5	3	16	3
Chroococcus limneticus					16
Lyngbya sp.		3			
Oscillatoria tenuis					
Oscillatoria sp.			11	5	14
Schizothrix calcicola	19				14
Schizothrix sp.					
CHLOROPHYTA					
Ankistrodesmus falcatus					
Chlamydomonas globosa					
Cladophora sp.			78		
Closterium parvulum					
Micractinium pusillum				108	43
Oedogonium sp.					
Pandorina morum				22	
Scenedesmus quadricauda					
Sphaerocystis schroeteri					

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	28 B	29 B	30 B	31 B	32 B
Spirogyra sp.					
Stigeoclonium sp.					
Ulothrix zonata					
Ulothrix sp.		1			
Unidentified chlorophyte	68	32	46	5	68
Unidentified flagellate					
CRYPTOPHYTA					
Cryptomonas erosa	27				
Rhodomonas minuta				5	
EUGLENOPHYTA					
Euglena proxima					
Euglena sp.			3		
Trachelomonas pulchella					
Trachelomonas volvocina					
CHRYSOPHYTA					
Achnanthes minutissima	8	3	14	8	5
Achnanthes lanceolata					8
Amphora ovalis	3				
Amphora ovalis var. pediculus	3		8	3	5
Caloneis amphisbaena	5	1	5		1
Caloneis bacillum					
Caloneis ventricosa				3	
Chrysidiastrum ocellatum					
Cocconeis pediculus	16	16	16	16	11
Cocconeis placentula			3		

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	28 B	29 B	30 B	31 B	32 B
Cyclotella meneghiniana	16	65	11	27	54
Cymbella affinis	40	70	119	86	68
Cymbella cistula			3		
Cymbella naviculoides					
Cymbella sinuata			3		5
Cymbella ventricosa					
Cymatopleura elliptica					
Cymatopleura solea			3		
Diatoma hiemale					
Diatoma vulgare	572	716	910	837	721
Didymosphenia geminata					
Epithemia sorex	70	92	70	70	73
Fragilaria construens					
Fragilaria crotonensis					
Fragilaria leptostauron	5	5	16	3	3
Fragilaria pinnata	22	38	27	5	14
Fragilaria vaucheriae	8		3	11	5
Gomphonema intricatum	14	22	19	14	16
Gomphonenma olivaceum	27	51	65	43	40
Gomphonema ventricosum	32	65	105	35	38
Gyrosigma acuminatum					3
Hannaea arcus	5				
Hantzschia amphioxys					
Meridion circulare					3
Navicula arvensis				3	
Navicula capitata					
Navicula cryptocephala	27	65	65	68	108
Navicula cuspidata					
Navicula minima					
Navicula denticula			3		

RBOSP PROGRESS REPORT

APPENDIX B-4-2 (Continued)

	STATION REPLICATE				
	28 B	29 B	30 B	31 B	32 B
Navicula radiosa					
Navicula pelliculosa	3				
Navicula protracta	3				
Navicula pupula			3		
Navicula salinarum	62	40	30	51	30
Navicula tripunctata	16	8	11	27	40
Navicula viridula	3	32	22	30	46
Navicula sp. 1					
Nitzschia acicularis					
Nitzschia apiculata	5	8		3	3
Nitzschia baccata		11	8		3
Nitzschia chasei					
Nitzschia dissipata	14	70	43	51	
Nitzschia frustulum	84	143	62	94	97
Nitzschia gracilis	3				3
Nitzschia linearis	3			14	3
Nitzschia palea		24	46	59	54
Nitzschia sigma					
Nitzschia sigmoidea			16		
Nitzschia vermicularis					
Pinnularia brebissonii					
Rhoicosphenia curvata		5			2
Rhopalodia gibba	3				
Surirella angustata					
Surirella ovalis	3				
Surirella ovata	16	8	14	32	30
Synedra amphicephala				3	
Synedra pulchella					
Synedra ulna	159	213	243	189	38
Thalassiosira fluviatilis	22	30	19	35	30

RBOSP PROGRESS REPORT

APPENDIX B-5-1

ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-5-1

ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975

CYANOPHYTA

Anabaena sp.
Calothrix epiphytica
Calothrix sp.
Chroococcus dispersus
Gomphosphaeria lacustris
Lyngbya sp.
Merismopedia glauca
Oscillatoria tenuis
Oscillatoria sp.
Plectonema sp.
Schizothrix calcicola
Unidentified spp.

Chlorophyta

Ankistrodesmus convolutus
Ankistrodesmus falcatus
Chlamydomonas globosa
Cladophora sp.
Closterium parvulum
Closterium venus
Crucigenia tetrapedia
Micractinium pusillum
Scenedesmus bijuga
Scenedesmus quauricauda
Spirogyra sp.
Stigeoclonium sp.
Ulothrix zonata
Ulothrix sp.
Zygnema sp.
Unidentified chlorophyte
Unidentified flagellate

CRYPTOPHYTA

Cryptomonas erosa
Cryptomonas ovata
Rhodomonas minuta

EUGLENOPHYTA

Euglena proxima
Euglena sp.

CHRYSOPHYTA

Achnanthes lanceolata
Achnanthes minutissima
Amphiprora ornata
Amphora ovalis
Amphora ovalis var. *pediculus*
Caloneis amphisbaena
Caloneis bacillum
Caloneis ventricosa
Chrysidiastrum ocellatum
Cocconeis pediculus
Cyclotella meneghiniana
Cylindrothece gracilis
Cymbella affinis
Cymbella prostrata
Cymbella turgida
Cymatopleura elliptica
Cymatopleura solea
Diatoma hiemale
Diatoma vulgare
Epithemia sorex
Fragilaria capucina
Fragilaria construens
Fragilaria leptostauron
Fragilaria pinnata
Fragilaria vaucheriae
Gomphonema intricatum
Gomphonema parvulum
Gomphonema olivaceum
Gomphonema ventricosum
Gyrosigma acuminatum
Hannaea arcus
Hantzschia amphioxys
Meridion circulare
Microsiphona spp
Navicula arvensis
Navicula cryptocephala
Navicula pelliculosa
Navicula pupula
Navicula pygmaea
Navicula salinarum
Navicula tripunctata

Navicula viridula
Navicula sp. 1
Navicula sp. 2
Nitzschia acicularis
Nitzschia apiculata
Nitzschia baccata
Nitzschia chasei
Nitzschia denticula
Nitzschia dissipata
Nitzschia frustulum
Nitzschia gracilis
Nitzschia linearis
Nitzschia palea
Nitzschia sigma
Nitzschia sigmoidea
Pinnularia abaujensis
Pinnularia borealis
Pinnularia brebissonii
Pinnularia globiceps
Pinnularia major
Pinnularia sp.
Rhoicosphenia curvata
Rhopalodia gibba
Stephanodiscus tenuis
Surirella ovalis
Surirella ovata
Surirella sp.
Synedra amphicephala
Synedra pulchella
Synedra ulna
Thalassiosira fluviatilis
Unidentified flagellate

PYRRHOPHYTA

Peridinium sp.

APPENDIX B-5-2

DENSITIES OF ALGAL TAXA OBSERVED
IN THE PHYTOPLANKTON DURING
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-5-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PHYTOPLANKTON DURING RBOSP AQUATIC BASELINE STUDIES APRIL 1975. (Data are expressed as cells/ml.)[1]

	STATION REPLICATE				
	1 A	2 A	3 A	4[2] A	5 A
CYANOPHYTA					
Anabaena sp.					
Calothrix epiphytica			16		
Calothrix sp.					
Chroococcus dispersus					
Gomphosphaeria lacustris					
Lyngbya sp.					
Merismopedia glauca					
Oscillatoria tenuis					
Oscillatoria sp.			302		
Plectonema sp.					
Schizothrix calcicola					
Unidentified spp.	394			183	
CHLOROPHYTA					
Ankistrodesmus convolutus					
Ankistrodesmus falcatus					
Chlamydomonas globosa			5		
Cladophora sp.					
Closterium parvulum					
Closterium venus					

1 Stations 6, 10-12 and 15-18 were dry at time of sampling.
2 Sample destroyed during shipment.

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	1 A	2 A	3 A	4 A	5 A
Crucigenia tetrapedia					
Micractinium pusillum					
Scenedesmus bijuga					
Scenedesmus quadricauda					
Spirogyra sp.			1		
Stigeoclonium sp.			11		
Ulothrix zonata					
Ulothrix sp.					
Unidentified chlorophyte	27	124			178
Unidentified flagellate					
Zygnema sp.					
CRYPTOPHYTA					
Cryptomonas erosa		27			
Cryptomonas ovata		5			
Rhodomonas minuta					
EUGLENOPHYTA					
Euglena proxima					5
Euglena sp.					
CHRYSOPHYTA					
Achnanthes lanceolata		86			
Achnanthes minutissima	178	194	227		86
Amphiprora ornata					
Amphora ovalis			5		5
Amphora ovalis var. pediculus					

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	1 A	2 A	3 A	4 A	5 A
Caloneis amphisbaena					
Caloneis bacillum					
Caloneis ventricosa			44		
Chrysidiastrum ocellatum					
Cocconeis pediculus					
Cyclotella meneghiniana					
Cymbella affinis	11	27	11		
Cymbella prostrata					
Cymbella turgida		22	5		
Cymatopleura elliptica					
Cymatopleura solea					
Diatoma hiemale			16		
Diatoma vulgare					
Epithemia sorex	27				
Fragilaria capucina					
Fragilaria construens					
Fragilaria leptostauron					
Fragilaria pinnata			5		
Fragilaria vaucheriae			65		22
Gomphonema intricatum	16		38		189
Gomphonema parvulum	5				11
Gomphonema olivaceum			5		16
Gomphonema ventricosum		5			
Gomphonema sp.		5			
Hannaea arcus					
Hantzschia amphioxys			5		
Meridion circulare					38
Microsiphona sp.					
Navicula arvensis		3	130		59

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	1	2	3	4	5
	A	A	A	A	A
Navicula cryptocephala	16		103		22
Navicula pelliculosa	31		367		49
Navicula pupula					
Navicula pygmaea					
Navicula salinarum			16		
Navicula tripunctata	11				
Navicula viridula		54	27		
Navicula sp. 1			16		
Navicula sp. 2			16		
Nitzschia acicularis					
Nitzschia apiculata					
Nitzschia baccata					
Nitzschia chasei					
Nitzschia denticula					
Nitzschia dissipata		22	11		
Nitzschia frustulum	11		216		113
Nitzschia gracilis					
Nitzschia linearis	5	5	11		5
Nitzschia palea					11
Nitzschia sigma					
Nitzschia sigmoidea		11			
Pinnularia abaujensis					
Pinnularia borealis					
Pinnularia brebissonii					5
Pinnularia globiceps			59		11
Pinnularia major					
Pinnularia sp.			113		
Rhoicosphenia curvata					5
Rhopalodia gibba					
Stephanodiscus tenuis					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	1	2	3	4	5
	A	A	A	A	A
Surirella ovalis			5		5
Surirella ovata	5	22			11
Surirella sp.		1			
Synedra amphicephala					86
Synedra pulchella					
Synedra ulna					
Thalassiosira fluviatilis			5		
Unidentified flagellate	22	265	243		130
PYRRHOPHYTA					
Peridinium sp.					

RBOSP PROGRESS REPORT

APPENDIX B-5-2

	STATION / REPLICATE				
	7 / A	8 / A	9 / A	13 / A	14 / A
CYANOPHYTA					
Anabaena sp.					
Calothrix epiphytica					
Calothrix sp.					
Coccococcus dispersus					
Gomphosphaeria lacustris					
Lyngbya sp.					
Merismopedia glauca	1			118	
Oscillatoria tenuis					
Oscillatoria sp.				18	
Plectonema sp.					
Schizothrix calcicola					
Unidentified spp.			540	207	
CHLOROPHYTA					
Ankistrodesmus convolutus					
Ankistrodesmus falcatus					
Chlamydomonas globosa					
Cladophora sp.					
Closterium parvulum					
Closterium venus	5				

2.4.2.82

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	7	8	9	13	14
	A	A	A	A	A
Crucigenia tetrapedia					
Micractinium pusillum					
Scenedesmus bijuga					24
Scenedesmus quadricauda					
Spirogyra sp.					
Stigeoclonium sp.					
Ulothrix zonata				32	
Ulothrix sp.	1		2		24
Unidentified chlorophyte	130	65	189	16	242
Unidentified flagellate					
Zygnema sp.			97		
CRYPTOPHYTA					
Cryptomonas erosa					
Cryptomonas ovata					
Rhodomonas minuta		5			
EUGLENOPHYTA					
Euglena proxima					
Euglena sp.					
CHRYSOPHYTA					
Achnanthes lanceolata		11	5		12
Achnanthes minutissima	680	416	491	108	295
Amphiprora ornata					
Amphora ovalis			16		
Amphora ovalis var. pediculus					

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	7 A	8 A	9 A	13 A	14 A
Caloneis amphisbaena					
Caloneis bacillum					12
Caloneis ventricosa					94
Chrysidiastrum ocellatum		146	826		
Cocconeis pediculus				5	
Cyclotella meneghiniana					
Cymbella affinis	32	5	22	16	12
Cymbella prostrata					
Cymbella turgida		5		10	24
Cymatopleura elliptica					
Cymatopleura solea					
Diatoma hiemale					
Diatoma vulgare					
Epithemia sorex	22				
Fragilaria capucina					
Fragilaria construens					
Fragilaria leptostauron					
Fragilaria pinnata					47
Fragilaria vaucheriae					6
Gomphonema intricatum	16	11		108	
Gomphonema parvulum					
Gomphonema olivaceum			5	11	
Gomphonema ventricosum		5			
Gyrosigma acuminatum	11		5	5	18
Hannaea arcus					
Hantzschia amphioxys				5	
Meridion circulare		16		11	
Microsiphona sp.					767
Navicula arvensis					602

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	7 A	8 A	9 A	13 A	14 A
Navicula cryptocephala	86	16	11	113	319
Navicula pelliculosa	49	11	124	11	1,245
Navicula pupula					
Navicula pygmaea					
Navicula salinarum				86	89
Navicula tripunctata	11				
Navicula viridula			5	22	35
Navicula sp. 1					
Navicula sp. 2					106
Nitzschia acicularis					
Nitzschia apiculata					18
Nitzschia baccata					
Nitzschia chasei			5		
Nitzschia denticula					289
Nitzschia dissipata	5				12
Nitzschia frustulum	65	11	11	16	968
Nitzschia gracilis					
Nitzschia linearis	54	2	22	38	
Nitzschia palea		5			212
Nitzschia sigma					
Nitzschia sigmoidea					
Pinnularia abaujensis					6
Pinnularia borealis					
Pinnularia brebissonii	11		5	11	41
Pinnularia globiceps					12
Pinnularia major					
Pinnularia sp.	11				
Rhoicosphenia curvata					
Rhopalodia gibba					
Stephanodiscus tenuis					71

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	7 A	8 A	9 A	13 A	14 A
Surirella ovalis				16	6
Surirella ovata	5		5	32	18
Surirella sp.					
Synedra amphicephala			11	5	30
Synedra pulchella					
Synedra ulna					
Thalassiosira fluviatilis					295
Unidentified flagellate	43	49	151		41
PYRRHOPHYTA					
Peridinium sp.					30

2.4.2.86

RBOCP PROGRESS REPORT

APPENDIX B-5-2

	STATION REPLICATE				
	19 A	20 A	21 A	22 A	23 A
CYANOPHYTA					
Anabaena sp.					
Calothrix epiphytica					
Calothrix sp.					
Chroococcus dispersus	43				
Gomphosphaeria lacustris					
Lyngbya sp.					
Merismopedia glauca					
Oscillatoria tenuis					
Oscillatoria sp.	1				
Plectonema sp.					
Schizothrix calcicola					
Unidentified spp.					
CHLOROPHYTA					
Ankistrodesmus convolutus					5
Ankistrodesmus falcatus					
Chlamydomonas globosa					
Cladophora sp.	32				
Closterium parvulum					
Closterium venus					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	19 A	20 A	21 A	22 A	23 A
Crucigenia tetrapedia					
Micractinium pusillum					
Scenedesmus bijuga					
Scenedesmus quadricauda					
Spirogyra sp.					
Stigeoclonium sp.					
Ulothrix zonata					
Ulothrix sp.					2
Unidentified chlorophyte	297	84		184	124
Unidentified flagellate					
Zygnema sp.					
CRYPTOPHYTA					
Cryptomonas erosa	5		5	11	11
Cryptomonas ovata					
Rhodomonas minuta	173		5	205	
EUGLENOPHYTA					
Euglena proxima					
Euglena sp.					5
CHRYSOPHYTA					
Achnanthes lanceolata					
Achnanthes minutissima	32	140	30	32	16
Amphiprora ornata		76		27	
Amphora ovalis					
Amphora ovalis var. pediculus					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	19 A	20 A	21 A	22 A	23 A
Caloneis amphisbaena					1
Caloneis bacillum					
Caloneis ventricosa					
Chrysidiastrum ocellatum					
Cocconeis placentula			3		
Cyclotella meneghiniana	11	481	14	232	
Cymbella affinis	5	59	27	22	65
Cymbella prostrata					
Cymbella turgida					
Cymatopleura elliptica					
Cymatopleura solea					5
Diatoma hiemale					
Diatoma vulgare			3		32
Epithemia sorex		27			22
Fragilaria capucina					
Fragilaria construens			5		
Fragilaria leptostauron					5
Fragilaria pinnata					22
Fragilaria vaucheriae				97	86
Gomphonema intricatum					11
Gomphonema parvulum					
Gomphonema olivaceum		5	19		49
Gomphonema ventricosum			8		65
Gyrosigma acuminatum					
Hannaea arcus					5
Hantzschia amphioxys					
Meridion circulare	146				
Microsiphona sp.					3
Navicula arvensis	5				5

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	19	20	21	22	23
	A	A	A	A	A
Navicula cryptocephala	92	81	43	22	103
Navicula pelliculosa	221	22	16	383	27
Navicula pupula					
Navicula pygmaea	5				
Navicula salinarum		16	14	113	11
Navicula tripunctata			30	16	38
Navicula viridula	22	135		22	421
Navicula sp. 1					
Navicula sp. 2					
Nitzschia acicularis	5				16
Nitzschia apiculata	16	108		27	
Nitzschia baccata					
Nitzschia chasei					
Nitzschia denticula					
Nitzschia dissipata	16	11	16		11
Nitzschia frustulum	178		16	108	49
Nitzschia gracilis					
Nitzschia linearis		5		22	
Nitzschia palea	27		3	27	
Nitzsehia sigma					
Nitzschia sigmoidea					
Pinnularia abaujensis					
Pinnularia borealis					
Pinnularia brebissonii				5	
Pinnularia globiceps					
Pinnularia major					
Pinnularia sp.					
Rhoicosphenia curvata					
Rhopalodia gibba					
Stephanodiscus tenuis					16

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	19 A	20 A	21 A	22 A	23 A
Surirella ovalis	5	92	3	43	
Surirella ovata	70	1,107	19	1,555	38
Surirella sp.					
Synedra amphicephala	167	16			
Synedra pulchella		38			
Synedra ulna		16			5
Thalassiosira fluviatilis	16	27	130	5	248
Unidentified flagellate		1			27
PYRRHOPHYTA					
Peridinium sp.					

RBOSP PROGRESS REPORT

APPENDIX B-5-2

	STATION REPLICATE				
	24 A	25 A	26 A	27 A	28 A
CYANOPHYTA					
Anabaena sp.	11	16			11
Calothrix epiphytica	38	27			22
Calothrix sp.					
Chroococcus dispersus					
Gomphosphaeria lacustris		173			
Lyngbya sp.					
Merismopedia glauca					
Oscillatoria tenuis		54			
Oscillatoria sp.					
Plectonema sp.	22				
Schizothrix calcicola					
Unidentified spp.	292	486			
CHLOROPHYTA					
Ankistrodesmus convolutus					
Ankistrodesmus falcatus					
Chlamydomonas globosa					
Cladophora sp.				1	1
Closterium parvulum					
Closterium venus					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	24 A	25 A	26 A	27 A	28 A
Crucigenia tetrapedia					22
Micractinium pusillum					
Scenedesmus bijuga		22			
Scenedesmus quadricauda					
Spirogyra sp.		16		1	
Stigeoclonium sp.					1
Ulothrix zonata	1	27			
Ulothrix sp.					
Unidentified chlorophyte	140	178	6		97
Unidentified flagellate					
Zygnema sp.					
CRYPTOPHYTA					
Cryptomonas erosa					
Cryptomonas ovata					
Rhodomonas minuta					
EUGLENOPHYTA					
Euglena proxima					
Euglena sp.					
CHRYSOPHYTA					
Achnanthes lanceolata					
Achnanthes minutissima	11	27	12		
Amphiprora ornata		11		11	
Amphora ovalis	11				5
Amphora ovalis var. pediculus	5		18		

APPENDIX (Continued)

	STATION				
	REPLICATE				
	24	25	26	27	28
	A	A	A	A	A
Caloneis amphisbaena	5	11	6		1
Caloneis bacillum					
Caloneis ventricosa					
Cocconeis placentula			6		
Cocconeis pediculus	5	5	6		16
Cyclotella meneghiniana		16	18	11	22
Cymbella affinis	81	70	94	11	43
Cymbella prostrata			35		
Cymbella turgida	16	27	6		
Cymatopleura elliptica			35		
Cymatopleura solea		11	12		
Cylindrotheca gracilis	11	11			
Diatoma vulgare	16	22	65	16	
Epithemia sorex	27	16	41	22	11
Fragilaria capucina				194	
Fragilaria construens					
Fragilaria leptostauron	49	22	18		
Fragilaria pinnata	27	49	18		16
Fragilaria vaucheriae	16	22	12		
Gomphonema intricatum		5		11	
Gomphonema parvulum					
Gomphonema olivaceum	32	32	266	22	32
Gomphonema ventricosum	81	65		43	43
Gyrosigma acuminatum					
Hannaea arcus		5		11	
Hantzschia amphioxys					
Meridion circulare	5				
Microsiphona sp.					
Navicula arvensis					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION / REPLICATE				
	24 A	25 A	26 A	27 A	28 A
Navicula cryptocephala	146	119	77	81	32
Navicula pelliculosa	76	92		11	49
Navicula pupula					
Navicula pygmaea					
Navicula salinarum	43	27	25	16	
Navicula tripunctata	65	11	12	38	22
Navicula viridula	475	869	584	97	275
Navicula sp. 1		5			
Navicula sp. 2					
Nitzschia acicularis				5	
Nitzschia apiculata			6		
Nitzschia baccata					
Nitzschia chasei					
Nitzschia denticula					
Nitzschia dissipata	11			38	11
Nitzschia frustulum	11	65	35	54	22
Nitzschia gracilis					
Nitzschia linearis	5	16		5	11
Nitzschia palea	5		6	11	5
Nitzschia sigma					
Nitzschia sigmoidea					
Pinnularia abaujensis					
Pinnularia borealis					
Pinnularia brebissonii					
Pinnularia globiceps					
Pinnularia major					
Pinnularia sp.					
Rhoicosphenia curvata			6		
Rhopalodia gibba					
Stephanodiscus tenuis	22	11	112		

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	24	25	26	27	28
	A	A	A	A	A
Surirella ovalis	59				
Surirella ovata		65	65	22	59
Surirella sp.					
Synedra amphicephala	11	16		16	
Synedra pulchella					
Synedra ulna					
Thalassiosira fluviatilis	281	302	140		140
Unidentified flagellate					
PYRRHOPHYTA					
Peridinium sp.					

2.4.2.96

APPENDIX B-5-2

	STATION REPLICATE				
	29 A	30 A	31 A	32 A	33 A
CYANOPHYTA					
Anabaena sp.					
Calothrix epiphytica			11	32	49
Calothrix sp.	38				
Chroococcus dispersus					130
Gomphosphaeria lacustris					173
Lyngbya sp.					
Merismopedia glauca					
Oscillatoria tenuis					16
Oscillatoria sp.					
Plectonema sp.					
Schizothrix calcicola	32				
Unidentified spp.					
CHLOROPHYTA					
Ankistrodesmus convolutus					
Ankistrodesmus falcatus					
Chlamydomonas globosa				27	
Cladophora sp.				11	
Closterium parvulum					
Closterium venus					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	29 A	30 A	31 A	32 A	33 A
Crucigenia tetrapedia					
Micractinium pusillum					
Scenedesmus bijuga					
Scenedesmus quadricauda					
Spirogyra sp.					
Stigeoclonium sp.					16
Ulothrix zonata		11			
Ulothrix sp.					
Unidentified chlorophyte	54	103	157	119	124
Unidentified flagellate					
Zygnema sp.					
CRYPTOPHYTA					
Cryptomonas erosa				5	
Cryptomonas ovata					
Rhodomonas minuta		16		16	32
EUGLENOPHYTA					
Euglena proxima		5			
Euglena sp.					
CHRYSOPHYTA					
Achnanthes lanceolata					
Achnanthes minutissima	5		32	32	22
Amphiprora ornata					
Amphora ovalis		16		5	5
Amphora ovalis var. pediculus	32	16	16	22	16

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	29 A	30 A	31 A	32 A	33 A
Caloneis amphisbaena	5		1	1	
Caloneis bacillum					
Caloneis ventricosa	5				
Chrysidiastrum ocellatum					16
Cocconeis pediculus		11	38		
Cyclotella meneghiniana	32		5	27	16
Cymbella affinis	32	65	86	70	119
Cymbella prostrata					
Cymbella turgida	5				
Cymatopleura elliptica					
Cymatopleura solea					
Diatoma hiemale					
Diatoma vulgare	5	5		11	32
Epithemia sorex	5	5	27	32	32
Fragilaria capucina					
Fragilaria construens					
Fragilaria leptostauron	43	5		5	22
Fragilaria pinnata	43	38	33	43	113
Fragilaria vaucheriae		54	27	43	32
Gomphonema intricatum					
Gomphonema parvulum				5	
Gomphonema olivaceum	38	22	70	81	32
Gomphonema ventricosum	16	16	3,256	38	49
Gyrosigma acuminatum				5	
Hannaea arcus		11			
Hantzschia amphioxys					
Meridion circulare					
Microsiphona sp.					
Navicula arvensis	5				

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	29 A	30 A	31 A	32 A	33 A
Navicula capitata				5	
Navicula cryptocephala	81	124	146	113	113
Navicula pelliculosa	286	38	32	81	81
Navicula pupula			5		
Navicula pygmaea					
Navicula salinarum	11	297	27	16	22
Navicula tripunctata	22	38	43	22	27
Navicula viridula	232		351	265	346
Navicula sp. 1					
Navicula sp. 2					
Nitzschia acicularis			5	16	
Nitzschia apiculata	5		5	5	
Nitzschia baccata					
Nitzschia chasei					
Nitzschia denticula					
Nitzschia dissipata	16		16		11
Nitzschia frustulum	38	54	43	76	103
Nitzschia gracilis					
Nitzschia linearis			32	16	5
Nitzschia palea			11		27
Nitzschia sigma					
Nitzschia sp.	11				
Pinnularia abaujensis					
Pinnularia borealis					5
Pinnularia brebissonii		11			
Pinnularia globiceps					
Pinnularia major					
Pinnularia sp.					
Rhoicosphenia curvata					
Rhopalodia gibba					
Stephanodiscus tenuis					

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	29	30	31	32	33
	A	A	A	A	A
Surirella ovalis				5	
Surirella ovata	54	38	70	65	76
Surirella sp.					
Synedra amphicephala					11
Synedra pulchella					
Synedra ulna					
Thalassiosira fluviatilis	184	194	216	313	211
Unidentified flagellate					
PYRRHOPHYTA					
Peridinium sp.					

2.4.2.101

	STATION				
	REPLICATE				
	34	35	___	___	___
	A	A	_	_	_
CYANOPHYTA					
Anabaena sp.					
Calothrix epiphytica					
Calothrix sp.					
Chroococcus dispersus					
Gomphosphaeria lacustris					
Lyngbya sp.					
Merismopedia glauca					
Oscillatoria tenuis			3	11	
Oscillatoria sp.					
Plectonema sp.					
Schizothrix calcicola					
Unidentified spp.					
CHLOROPHYTA					
Ankistrodesmus convolutus					
Ankistrodesmus falcatus					
Chlamydomonas globosa					
Cladophora sp.					
Closterium parvulum					
Closterium venus					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	34 A	35 A	___ _	___ _	___ _
Crucigenia tetrapedia					
Micractinium pusillum					
Scenedesmus bijuga					
Scenedesmus quadricauda					
Spirogyra sp.					
Stigeoclonium sp.		5			
Ulothrix zonata					
Ulothrix sp.					
Unidentified chlorophyte	32	92			
Unidentified flagellate					
Zygnema sp.					
CRYPTOPHYTA					
Cryptomonas erosa					
Cryptomonas ovata					
Rhodomonas minuta		49			
EUGLENOPHYTA					
Euglena proxima					
Euglena sp.					
CHRYSOPHYTA					
Achnanthes lanceolata					
Achnanthes minutissima	5	11			
Amphiprora ornata					
Amphora ovalis		5			
Amphora ovalis var. pediculus					

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	34 A	35 A	___ _	___ _	___ _
Caloneis amphisbaena	1	5			
Caloneis bacillum					
Chrysidiastrum ocellatum		11			
Cocconeis placentula	8				
Cocconeis pediculus		11			
Cyclotella meneghiniana	8	11			
Cymbella affinis	68	43			
Cymbella prostrata					
Cymbella turgida					
Cymatopleura elliptica	3				
Cylindrotheca gracilis	3				
Diatoma hiemale					
Diatoma vulgare	11	11			
Epithemia sorex	27	27			
Fragilaria capucina	5				
Fragilaria construens					
Fragilaria leptostauron	5				
Fragilaria pinnata		54			
Fragilaria vaucheriae	32	22			
Gomphonema intricatum					
Gomphonema parvulum					
Gomphonema olivaceum	70	27			
Gomphonema ventricosum	3	22			
Gyrosigma acuminatum					
Hannaea arcus	5	5			
Hantzschia amphioxys					
Melosira italica		11			
Microsiphona sp.					
Navicula arvensis					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	34 A	35 A	___ _	___ _	___ _
Navicula cryptocephala	62	113			
Navicula pelliculosa	5	86			
Navicula pupula	3				
Navicula pygmaea					
Navicula salinarum	11	27			
Navicula tripunctata	135	22			
Navicula viridula	189	184			
Navicula sp. 1					
Navicula sp. 2					
Nitzschia acicularis					
Nitzschia apiculata					
Nitzschia baccata					
Nitzschia chasei					
Nitzschia denticula					
Nitzschia dissipata		5			
Nitzschia frustulum	49	140			
Nitzschia gracilis					
Nitzschia linearis	3	5			
Nitzschia palea	3	5			
Nitzschia sigma					
Nitzschia sigmoidea					
Pinnularia abaujensis					
Pinnularia borealis					
Pinnularia brebissonii	3	11			
Pinnularia globiceps					
Pinnularia major					
Pinnularia sp.					
Rhoicosphenia curvata					
Rhopalodia gibba					
Stephanodiscus tenuis					

RBOSP PROGRESS REPORT

APPENDIX B-5-2 (Continued)

	STATION REPLICATE				
	34	35	___	___	___
	A	A	_	_	_
Surirella ovalis					
Surirella ovata	35	32			
Surirella sp.					
Synedra amphicephala					
Synedra pulchella					
Synedra ulna		5			
Thalassiosira fluviatilis	259	216			
Unidentified flagellate					
PYRRHOPHYTA					
Peridinium sp.					

2.4.3 Zooplankton

2.4.3 Zooplankton

2.4.3.1 Objectives

The objectives of this aspect of the aquatic program are to determine the species composition and abundance of zooplankton at each aquatic sampling location.

2.4.3.2 Methods

No change in methods has occurred since Progress Report-2. See section 2.4.3.2 of Progress Report 2 for specific methods used in zooplankton studies.

2.4.3.3 Results

Zooplankton taxa encountered in December 1974 - January 1975 collections are listed in Appendix B-6-1. The results of the analysis of the second replicate of zooplankton collected during December 1974 - January 1975 are presented in Appendix B-6-2 (results from the first replicate were reported in Appendices A-7-1 and A-7-2 of Progress Report-2). A total of 50 zooplankton taxa was observed in the December 1974 - January 1975 collections (both replicates). As a result of further taxonomic study, organisms which were previously reported as Alona rectangula will now be reported as Alona sp. At the headwater stations, the most abundant taxa in December - January included the protozoans Centropyxis aculeata and C. constricta and bdelloid rotifers. At the tract stations, the most abundant taxa included the protozoans Centropyxis aculeata and Vorticella sp; the rotifers Colurella spp. Notholca acuminata, N. squamula, Monostyla sp., and M. closterocerca; and crustacean nauplii and Bryocamptus hiemalis. At the Yellow Creek stations, the most abundant taxa included the protozoans Centropyxis aculeata, and C. constricta; the rotifers Monostyla sp., M. closterocerca, and Notholca acuminata; and ostracods. Zooplankton abundance was much lower at Station 19 than at any of the other Yellow Creek stations. The samples from Station 19 were collected at the outflow of a spring. Zooplankton densities at the White River stations were generally greater than those found in other study areas. The most abundant taxa in the White River included the protozoans Centropyxis aculeata and Vorticella sp.; and the rotifer Proales sp.

In the analysis of one replicate from the zooplankton collections of April 1975, a total of 39 species has been observed. The list of zooplankton species observed to date in the April collections is presented in Appendix B-7-1. Quantitative data from one replicate are presented in Appendix B-7-2. Analysis of the one replicate indicates that at the headwater stations above Tract C-a the most abundant taxa were Centropyxis aculeata, Epistylis sp., bdelloid rotifers, unidentified rotifer species (contracted), and crustacean nauplii. At the tract stations, the most abundant taxa included Centropyxis aculeata, Vorticella sp., bdelloid rotifers, and Notholca squamula. At the Yellow Creek stations, the most

abundant taxa were Centropyxis aculeata, Difflugia acuminata, Notholca acuminata, and bdelloid rotifers. At the White River stations, Centropyxis aculeata, Chilodonella spp., Epistylis sp., Vorticella sp., bdelloid rotifers, Notholca squamula, Proales sp., and unidentified rotifer species (contracted) were the most abundant taxa.

APPENDIX B-6-1

ZOOPLANKTON TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-6-1

ZOOPLANKTON TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES, DECEMBER 1974 - JANUARY 1975

PROTOZOA

Centropyxis aculeata
Centropyxis constricta
Chilodonella cucullulus
Ciliate (Unidentified)
Cyphoderia ampulla
Didinium nasutum
Didinium sp.
Difflugia acuminata
Epistylis sp.
Paramecium aurelia
Paramecium multimicronucleatum
Paramecium sp.
Platyophrya
Strombidium sp.
Vorticella convallaria
Vorticella sp.

ROTIFERA

Bdelloidea
Cephalodella gibba
Cephalodella forficula
Cephalodella megalocephala
Cephalodella sp.
Colurella adriatica
Colurella spp.
Keratella cochlearis
Lecane flexis
Lecane sp
Lepadella ovalis
Lepadella sp.
Monostyla bulla
Monostyla closterocerca
Monostyla lunaris
Monostyla sp.
Notholca acuminata
Notholca squamula
Proales sp.
Rotifers (Contracted)

TARDIGRADA

ARTHROPODA

Alona guttata
Alona sp.
Bryocamptus hiemalis
Ceriodaphnia quadrangula
Chydorus sphaericus
Cyclopoid copepodites
Cyclops vernalis
Eucyclops agilis
Nauplii
Ostracoda
Paracyclops fimbriatus poppei
Pleuroxus aduncus
Simocephalus vetulus

RBOSP PROGRESS REPORT

APPENDIX B-6-2

DENSITIES OF ZOOPLANKTON OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-6-2

DENSITIES OF ZOOPLANKTON OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES, DECEMBER 1974 - JANUARY 1975. (Data are expressed as organisms/m^3)[1]

	STATION REPLICATE				
	3 B	4 B	5 B	8 B	9 B
PROTOZOA					
Centropyxis aculeata	6200	6000	600	800	400
Centropyxis constricta	4200	600	200		
Chiloconella cuculiula					
Ciliate (Unicentified)	200			400	
Cyphoderia ampulla		800	400		
Dicinium nasutum					
Dicinium sp.		200			
Difflugia acuminata					
Epistylis sp.	200				
Paramecium aurelia					
Paramecium multimicronucleatum					
Paramecium sp.					
Platyophrya					
Strombidium sp.					
Vorticella convallaria			200	800	
Vorticella sp.					
ROTIFERA					
Bdelloidea	200	4400			
Cephalodella gibba					
Cephalodella forficula				600	
Cephalodella megalocephala					
Cephalodella sp.					

[1]Stations 1,2,6,7,10-12, and 27-29 were dry, inaccessible, or f[illegible] the time of sampling.

APPENDIX B-6-2 (Continued)

	STATION / REPLICATE				
	3 / B	4 / B	5 / B	8 / B	9 / B
ROTIFERA (Continued)					
Colurella adriatica					
Colurella sp.	600			200	600
Keratella cochlearis					
Lecane flexis					
Lecane sp.					
Lepadella ovalis			200		
Lepadella sp.			200		
Monostyla bulla					
Monostyla closterocerca			1200		
Monostyla lunaris					
Monostyla sp.					
Notholca acuminata			1200	600	
Notholca squamula		200			1000
Proales sp.	00			200	
Rotifers (Contracted)	400		600	600	400
TARDIGRADA		10		290	10
ARTHROPODA					
Alona guttata					
Alona sp.					
Bryocamptus hiemalis		100		2380	20
Ceriodaphnia quadrangula					
Chyodorus sphaericus					
Cyclopoid copepodites					
Cyclops vernalis					
Eucyclops agilis				10	10

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	3 B	4 B	5 B	8 B	9 B
Nauplii	200	200		6000	
Ostracoda		300		270	20
Paracyclops fimbriatus poppei					10
Pleuroxus acuncus					
Simocephalus vetulus					

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	13 B	14 B	19 B	20 B	21 B
PROTOZOA					
Centropyxis aculeata	2200	200	800	2200	1600
Centropyxis constricta					200
Chilodonella cucullula					200
Ciliate (Unidentified)					200
Cyphoderia ampulla					
Didinium nasutum					
Didinium sp.					
Difflugia acuminata					
Epistylis sp.					
Paramecium aurelia				200	
Paramecium multimicronucleatum					
Paramecium sp.					
Platyophyra					
Strombidium sp.					
Vorticella convallaria					
Vorticella sp.	200				
ROTIFERA					
Bdelloidea					
Cephalodella gibba	200				200
Cephalodella forficula					
Cephalodella megalocephala					
Cephalodella sp.					

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	13 B	14 B	19 B	20 B	21 B
ROTIFERA (Continued)					
Colurella adriatica					
Colurella spp.				200	
Keratella cochlearis					
Lecane flexis					
Lecane sp.					
Lepadella ovalis					
Lepadella sp.					400
Monostyla bulla					
Monostyla closterocerca		2200		1000	1400
Monostyla lunaris					
Monostyla sp.					
Notholca acuminata		800	400	1000	200
Notholca squamula	400				
Proales sp.					
Rotifers (Contracted)	400				
TARDIGRADA		10			
ARTHROPODA					
Alona guttata					
Alona sp.					
Bryocamptus hiemalis		20			
Ceriodaphnia quadrangula	10				
Chyodorus sphaericus					
Cyclopoid copepodites	10	10	20		10
Cyclops vernalis					
Eucyclops agilis		20	40		

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	13 B	14 B	19 B	20 B	21 B
Nauplii	200			600	200
Ostracoda	31	20		10	
Paracyclops fimbriatus poppei					
Pleuroxus aduncus					
Simocephalus vetulus					

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	22 B	23 B	24 B	25 B	26 B
PROTOZOA					
Centropyxis aculeata	200	12600	13000	9200	9400
Centropyxis constricta				200	
Chilodonella cucullula					
Ciliate (Unidentified)		800	200	1400	1200
Cyphoderia ampulla					
Didinium nasutum					
Didinium sp.		200	200		
Epistylis sp.		600	400		
Paramecium aurelia					
Paramecium multimicronucleatum				200	
Paramecium sp.					
Platyophyra					
Strombidium sp.					
Vorticella convallaria					
Vorticella sp.	400	1800	1600		1800
ROTIFERA					
Bdelloidea					
Cephalodella gibba			600	600	200
Cephalodella forficula					
Cephalodella megalocephala					
Cephalodella sp.	200			600	400

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	22 B	23 B	24 B	25 B	26 B
ROTIFERA (Continued)					
Colurella adriatica		400			
Colurella spp.	200		1000	400	
Keratella cochlearis					
Lecane flexis			200		
Lecane sp.					
Lepadella ovalis		200	800	400	200
Lepadella sp.					
Monostyla bulla	600	200	400		600
Monostyla closterocerca				200	
Monostyla lunaris					
Monostyla sp.	800				200
Notholca acuminata			200	800	
Notholca squamula		7000	6400	6200	5000
Proales sp.	400	200	1000	400	200
Rotifers (Contracted)					
TARDIGRADA					
ARTHROPODA					
Alona guttata					10
Alona sp.					
Bryocamptus hiemalis					
Ceriodaphnia quadrangula					
Chydorus sphaericus			10		10
Cyclopoid copepodites					10
Cyclops vernalis		10	20	20	20
Eucyclops agilis					

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	22 B	23 B	24 B	25 B	26 B
Nauplii			200	200	
Ostracoda	10				
Paracyclops fimbriatus poppei			20		
Pleuroxus aduncus					
Simocephalus vetulus					

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	30 B	31 B	32 B	33 B	34 B
PROTOZOA					
Centropyxis aculeata	4000	8000	2400	1000	4000
Centropyxis constricta					
Chilodonella cucullula	2500	2000		600	1000
Ciliate (Unidentified)			200		
Cyphoderia ampulla					
Didinium nasutum					200
Didinium sp.					200
Difflugia acuminata	2000	1500		3600	200
Epistylis sp.					
Paramecium aurelia					
Paramecium multimicronucleatum					
Paramecium sp.					
Platyophyra					
Strombidium sp.					
Vorticella convallaria		1000	200		
Vorticella sp.					
ROTIFERA					
Bdelloidea					
Cephalodella gibba					
Cephalodella forficula					
Cephalodella megalocephala	500	500	600	200	600
Cephalodella sp.					

APPENDIX B-6-2 (Continued)

	STATION REPLICATE				
	30 B	31 B	32 B	33 B	34 B
ROTIFERA (Continued)					
Colurella adriatica					
Colurella spp.	500		800		
Keratella cochlearis	500				200
Lecane flexis					
Lecane sp.					
Lepadella ovalis				800	
Lepadella sp.					
Monostyla bulla					200
Monostyla closterocerca	500				
Monostyla lunaris			400		
Monostyla sp.					200
Notholca acuminata				400	
Notholca squamula		2500	3800	4200	2200
Proales sp.		1500	600		600
Rotifers (Contracted)	500				
TARDIGRADA					
ARTHROPODA					
Alona guttata					
Alona sp.					
Bryocamptus hiemalis					
Ceriodaphnia quadrangula					
Chydorus sphaericus					
Cyclopoid copepodites					
Cyclops vernalis					
Eucyclops agilis					

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE 35 B
PROTOZOA	
Centropyxis aculeata	5800
Centropyxis constricta	
Chilodonella cucullula	
Ciliate (Unidentified)	2000
Cyphoderia ampulla	
Didinium nasutum	
Didinium sp.	
Difflugia acuminata	
Epistylis sp.	6200
Paramecium aurelia	
Paramecium multimicronucleatum	
Paramecium sp.	
Platyophyra	
Strombidium sp.	
Vorticella convallaria	400
Vorticella sp.	
ROTIFERA	
Bdelloidea	200
Cephalodella gibba	
Cephalodella forficula	
Cephalodella megalocephala	
Cephalodella sp.	

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE 35 B
ROTIFERA (Continued)	
Colurella adriatica	
Colurella spp.	
Keratella cochlearis	
Lecane flexis	400
Lecane sp.	
Lepadella ovalis	
Lepadella sp.	200
Monostyla bulla	
Monostyla closterocerca	200
Monostyla lunaris	
Monostyla sp.	
Notholca acuminata	200
Notholca squamula	200
Proales sp.	6600
Rotifers (Contracted)	1200
TARDIGRADA	
ARTHROPODA	
Alona guttata	
Alona sp.	
Bryocamptus hiemalis	
Ceriodaphnia quadrangula	
Chydorus sphaericus	
Cyclopoid copepodites	
Cyclops vernalis	
Eucyclops agilis	

RBOSP PROGRESS REPORT

APPENDIX B-6-2 (Continued)

	STATION REPLICATE
	35 B
Nauplii	200
Ostracoda	
Paracyclops fimbriatus poppei	
Pleuroxus aduncus	
Simocephalus vetulus	

RBOSP PROGRESS REPORT

APPENDIX B-7-1

ZOOPLANKTON TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-7-1

ZOOPLANKTON TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975

PROTOZOA

- Centropyxis aculeata
- Centropyxis constricta
- Centropyxis sp.
- Chilodonella sp.
- Ciliates (Unidentified)
- Cyphoderia ampulla
- Difflugia acuminata
- Difflugia lebes
- Difflugia sp.
- Epistylis sp.
- Vorticella campanula
- Vorticella sp.

ROTIFERA

- Bdelloidea
- Brachionus quadridentatus
- Cephalodella spp.
- Colurella adriatica
- Lecane luna
- Monostyla lunaris
- Monostyla sp.
- Notholca acuminata
- Notholca squamula
- Proales sp.
- Polyarthra sp.
- Rotifers spp. (Contracted)

ARTHROPODA

- Arachnoidea
  - Acari
- Crustacea
  - Nauplii
  - Amphipoda
  - Hyalella azteca
  - Cladocera
    - Alona sp.
    - Chydorus sphaericus
    - Pleuroxus aduncus

Copepoda
Bryocamptus hiemalis
Cyclopoid copepodites
Eucyclops agilis
Harpacticoids
Harpacticoid copepodites
Paracyclops fimbriatus poppei
Ostracoda
Cyprinotus pellucidus
Ostracods spp. (Unidentified)

TARDIGRADA

Macrobiotus spp.

RBOSP PROGRESS REPORT

APPENDIX B-7-2

DENSITIES OF ZOOPLANKTON OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-7-2

DENSITIES OF ZOOPLANKTON OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES, APRIL 1975.[1] (Data are expressed as organisms/m^3)

	STATION REPLICATE				
	1 A	2 A	3 A	4 A	5 A
PROTOZOA					
Centropyxis aculeata	400	4400	1000	6000	400
Centropyxis constricta	200				
Centropyxis sp.		4400			
Chilodonella sp.					
Ciliates (Unidentified)		200			
Cyphoderia ampulla			200	600	200
Difflugia acuminata		400	200		200
Difflugia lebes			600		
Difflugia sp.					
Epistylis sp.		2000			1200
Vorticella campanula		400			
Vorticella sp.					600
ROTIFERA					
Bdelloidea			10200		
Brachionus quadridentatus					
Cephalodella spp.		200			
Colurella adriatica					200
Lecane luna					
Monostyla lunaris					
Monostyla sp.					
Notholca acuminata					200
Notholca squamula					200
Proales sp.					
Polyarthra sp.					
Rotifers (Contracted)	2200	8200		200	800

[1]Stations 6,10-12, and 15-18 were dry at time of sampling.

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	1 A	2 A	3 A	4 A	5 A
ARTHROPODA					
Arachnoidea					
Acari					
Crustacea					
Nauplii				2000	
Amphipoda					
Hyalella azteca					10
Claccera					
Alona sp.					
Chydorus sphaericus					20
Pleuroxus aduncus					
Copepoda					
Bryocamptus hiemalis		360	90	170	
Cyclopoid copepodite					
Eucyclops agilis					10
Harpacticoida					
Harpacticoid copepodites	10				
Paracyclops fimbriatus poppei					
Ostracoda					
Cyprinotus pellucidus		50			
Ostracods (Unidentified)				60	10
TARDIGRADA					
Macrobiotus spp.		10	60	20	

2.4.3.52

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	6 A	7 A	8 A	9 A	10 A
PROTOZOA	Dry				Dry
Centropyxis aculeata		1800		800	
Centropyxis constricta		300			
Centropyxis sp.			400		
Chilodonella sp.		200	400	400	
Ciliates (Unidentified)		400		200	
Cyphoderia ampulla			400		
Difflugia acuminata					
Difflugia lebes					
Difflugia sp.			5200	400	
Epistylis sp.					
Vorticella campanula					
Vorticella sp.					
ROTIFERA					
Bdelloidea		4800	200		
Brachionus quadridentatus					
Cephalodella spp.			1000	400	
Colurella adriatica					
Lecane luna					
Monostyla lunaris					
Monostyla sp.					
Notholca acuminata				6000	
Notholca squamula			200		
Proales sp.					
Polyarthra sp.			600	800	
Rotifers (Contracted)					

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	6 A Dry	7 A	8 A	9 A	10 A Dry
ARTHROPODA					
Arachnoidea					
Acari					
Crustacea					
Nauplii					
Ampnipoda					
Hyalella azteca					
Cladocera					
Alona sp.					
Chydorus sphaericus					
Pleuroxus aduncus					
Copepoda					
Bryocamptus hiemalis			10	10	
Cyclopoid copepodite					
Eucyclops agilis					
Harpacticoida					
Harpacticoid copepodites					
Paracyclops fimbriatus poppei				10	
Ostracoda					
Cyprinotus pellucidus					
Ostracods (Unidentified)		250		30	
TARDIGRADA					
Macrobiotus spp.				10	

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	11 A Dry	12 A Dry	13 A	14 A	15 A Dry
PROTOZOA					
Centropyxis aculeata			1400	600	
Centropyxis constricta					
Centropyxis sp.					
Chilodonella sp.					
Ciliates (Unidentified)				1000	
Cyphoderia ampulla					
Difflugia acuminata					
Difflugia lebes			400		
Difflugia sp.					
Epistylis sp.				200	
Vorticella campanula					
Vorticella sp.				800	
ROTIFERA					
Bdelloidea			16000	2000	
Brachionus quadridentatus					
Cephalodella spp.					
Colurella adriatica			200		
Lecane luna					
Monostyla lunaris					
Monostyla sp.					
Notholca acuminata					
Notholca squamula					
Proales sp.					
Polyarthra sp.					
Rotifers (Contracted)					

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION / REPLICATE				
	11 / A	12 / A	13 / A	14 / A	15 / A
ARTHROPODA	Dry	Dry			Dry
Arachnoidea					
Acari					
Crustacea					
Nauplii			400		
Amphipoda					
Hyalella azteca					
Cladocera					
Alona sp.					
Chydorus sphaericus					
Pleuroxus aduncus					
Copepoda					
Bryocamptus hiemalis			10		
Cyclopoid copepodite					10
Eucyclops agilis					
Harpacticoida (Unidentified)					
Harpacticoid copepodites					
Paracyclops fimbriatus poppei					
Ostracoda					
Cyprinotus pellucidus					
Ostracods (Unidentified)			10		20
TARDIGRADA					
Macrobiotus spp.			170		10

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	16 A Dry	17 A Dry	18 A Dry	19 A	20 A
PROTOZOA					
Centropyxis aculeata				400	2600
Centropyxis constricta					
Centropyxis sp.					
Chilodonella sp.					
Ciliates (Unidentified)					
Cyphoderia ampulla					
Difflucia acuminata					600
Difflucia lebes					
Difflucia sp.					
Epistylis sp.					
Vorticella campanula				200	200
Vorticella sp.					
ROTIFERA					
Bdelloidea				800	
Brachionus quadridentatus					
Cephalodella spp.					
Colurella adriatica				400	
Lecane luna					200
Monostyla lunaris					
Monostyla sp.				1200	200
Notholca acuminata				200	
Notholca squamula					
Proales sp.					
Polyarthra sp.					
Rotifers (Contracted)					

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	16 A Dry	17 A Dry	18 A Dry	19 A	20 A
ARTHROPODA					
Arachnoidea					
Acari				60	
Crustacea					
Nauplii				200	
Amphipoda					
Hyalella azteca					
Cladocera					
Alona sp.				10	
Chydorus sphaericus					
Pleuroxus aduncus					
Copepoda					
Bryocamptus hiemalis					
Cyclopoid copepodite					
Eucyclops agilis				40	20
Harpacticoida				20	
Harpacticoid copepodites					
Paracyclops fimbriatus poppei					10
Ostracoda					
Cyprinotus pellucidus					
Ostracods (Unidentified)					20
TARDIGRADA					
Macrobiotus spp.					

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	21 A	22 A	23 A	24 A	25 A
PROTOZOA					
Centropyxis aculeata	2800	1400	1400	4600	4800
Centropyxis constricta					
Centropyxis sp.					
Chilodonella sp.			2400	200	400
Ciliates (Unidentified)	400		200		
Cyphoderia ampulla			600		
Difflugia acuminata	200	400		400	200
Difflugia lebes	400				
Difflugia sp.					
Epistylis sp.			1400	8200	800
Vorticella campanula					
Vorticella sp.			3400		200
ROTIFERA					
Baelloidea	200		1400		200
Brachionus quadridentatus				400	
Cephalocella spp.					
Colurella adriatica			200		
Lecane luna					
Monostyla lunaris			200		
Monostyla sp.	200				
Notnolca acuminata				400	200
Notholca squamula			1400	800	400
Proales sp.			1600	1400	800
Polyarthra sp.				200	
Rotifers (Contracted)	200			200	

2.4.3.59

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	21 A	22 A	23 A	24 A	25 A
ARTHROPODA					
Arachnoidea					
Acari	10				
Crustacea					
Nauplii					
Amphipoda					
Hyalella azteca					
Cladocera					
Alona sp.					
Chydorus sphaericus			10		10
Pleuroxus aduncus					
Copepoda					
Bryocamptus hiemalis					
Cyclopoid copepodite			20		10
Eucyclops agilis		10			
Harpacticoida			10		
Harpacticoid copepodites					
Paracyclops fimbriatus poppei					
Ostracoda					
Cyprinotus pellucidus					
Ostracods (Unidentified)	60	40	10	10	10
TARDIGRADA					
Macrobiotus spp.					10

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	26 A	27 A	28 A	29 A	30 A
PROTOZOA					
Centropyxis aculeata	4600	4800	4000	2600	600
Centropyxis constricta					
Centropyxis sp.					
Chilodonella sp.	400			400	
Ciliates (Unidentified)				400	800
Cyphoderia ampulla					
Difflucia acuminata	2000		400		
Difflucia lebes					
Difflucia sp.					
Epistylis sp.	1400	5600	600	600	600
Vorticella campanula					
Vorticella sp.		600	2800	2800	1000
ROTIFERA					
Boeltcidea	1000	600	800	800	200
Brachionus quadridentatus					
Cephalocella sp.	200		200	200	
Colurella adriatica	200			600	
Lecane luna					
Monostyla lunaris			200		
Monostyla sp.					
Notholca acuminata	200	400	200		200
Notholca squamula	800	1200		1000	400
Proales sp.					
Polyarthra sp.			200		
Rotifers (Contracted)		1000	800	1200	

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	26 A	27 A	28 A	29 A	30 A
ARTHROPODA					
Arachnoidea					
Acari		10			
Crustacea					
Nauplii			200		
Amphipoda					
Hyalella azteca					
Cladocera					
Alona sp.				10	
Chydorus sphaericus					
Pleuroxus aduncus				10	
Copepoda					
Bryocamptus hiemalis					
Cyclopoid copepodite					
Eucyclops agilis				20	
Harpacticoida		10			
Harpacticoid copepodites					
Paracyclops fimbriatus poppei					
Ostracoda					
Cyprinotus pellucidus					
Ostracods (Unidentified)		40			
TARDIGRADA					
Macrobiotus spp.		40			

2.4.3.62

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	31 A	32 A	33 A	34 A	35 A
PROTOZOA					
Centropyxis aculeata	10200	8000	18400	15800	9600
Centropyxis constricta					
Centropyxis sp.					
Chilodonella sp.	400	200	1000	400	800
Ciliates (Unidentified)	400				
Cyphoderia ampulla				200	200
Difflugia acuminata					
Difflugia lebes			600	600	
Difflugia sp.					
Epistylis sp.	600	800	2400	2600	2600
Vorticella campanula					
Vorticella sp.	1600	1600	2400	800	1800
ROTIFERA					
Bdelloidea	1200	1000	2000	1000	200
Brachionus quadridentatus	200			200	400
Cephalodella spp.		400	200	200	200
Colurella adriatica		200	200		200
Lecane luna					
Monostyla lunaris	200	200			200
Monostyla sp.					
Notholca acuminata	200	200			
Notholca squamula	1200	200	800	400	1800
Proales sp.					
Polyarthra sp.					
Rotifers (Contracted)	600	600	400	1800	200

RBOSP PROGRESS REPORT

APPENDIX B-7-2 (Continued)

	STATION REPLICATE				
	31 A	32 A	33 A	34 A	35 A
ARTHROPODA					
Arachnoidea					
Acari					
Crustacea					
Nauplii		600			200
Amphipoda					
Hyalella azteca					
Cladocera					
Alona sp.					
Chydorus sphaericus					
Pleuroxus aduncus					
Copepoda					
Bryocamptus hiemalis					10
Cyclopoid copepodite					
Eucyclops agilis			10		
Harpacticoida					
Harpacticoid copepodites					
Paracyclops fimbriatus poppei					
Ostracoda					
Cyprinotus pellucidus					
Ostracod (Unidentified)					
TARDIGRADA					
Macrobiotus spp.					

2.4.3.64

RBOSP PROGRESS REPORT

2.4.4 Periphyton

2.4.4 Periphyton

2.4.4.1 Objectives

The objective of this aspect of the aquatic studies is to describe the algal component of the periphyton community at each station, including the composition, abundance, and diversity of that component.

2.4.4.2 Methods

The methods reported in section 2.4.4.2 of Progress Report-2 remain unchanged, with the exception that, in the laboratory, each preserved periphyton sample was diluted to a constant volume of 100 ml rather than 130 ml.

2.4.4.3 Results

Appendix B-8-1 lists the algal taxa encountered in the December 1974 - January 1975 periphyton collections. The results of the analysis of the third replicate of periphyton collected during December 1974 - January 1975 are presented in Appendix B-8-2 (results from the other two replicates were reported in Appendices A-9-1 and A-9-2 of Progress Report-2). A total of seventy-nine algal taxa was observed in the December 1974 - January 1975 collections. As a result of additional taxonomic study, taxa previously reported as Rivularia sp. and Stephanodiscus tenuis will now be reported as Calothrix sp. and Thalassiosira fluviatilis, respectively. Based upon the results from the three replicate samples taken at each station, the most abundant algae in the periphyton of the headwater stations during December - January were the diatoms Achnanthes lanceolata, A. minutissima, Gomphonema intricatum, Nitzschia frustulum, and N. linearis (Achnanthes minutissima was particularly abundant at Station 4). At the tract stations, the most abundant species were the diatoms Achnanthes minutissima, Cymbella affinis, Navicula cryptocephala, Nitzschia denticula, and Synedra amphicephala. Alga densities were quite low at Stations 8 and 9, whereas densities of Achnanthes minutissima were very high at Station 14. In Yellow Creek, the most abundant species at Station 19 were the diatoms Navicula cryptocephala, N. viridula, Nitzschia frustulum, N. palea, Surirella ovata, and Synedra amphicephala. In the White River, densities were generally high and the diatoms Diatoma vulgare, Epithemia sorex, and Navicula cryptocephala were particularly abundant. Several species of Cyanophyta (blue-greens), including Calothrix sp. and Lyngbya sp., were also quite abundant.

During the analysis of one replicate from the periphyton collections made during April 1975, a total of 64 taxa was encountered. Appendix B-9-1 lists the algal taxa observed in the initial replicate and Appendix B-9-2 presents the quantitative data from that replicate. At the headwater stations, the most abundant species included the diatoms Achnanthes minutissima, Gomphonema intricatum, Meridion circulare, Surirella ovata, and Synedra amphicephala. At the tract stations, the blue-green alga Plectonema sp.

and the diatoms Achnanthes minutissima, Gomphonema intricatum, Nitzschia denticula, and N. frustulum were the most abundant taxa. In Yellow Creek, the most abundant species were the diatoms Achnanthes minutissima, Fragilaria vaucheriae, Navicula pelliculosa, and Surirella ovata. In the White River the blue-green species Calothrix sp. and the diatoms Epithemia sorex, Navicula cryptocephala, N. tripunctata, N. viridula, Nitzschia dissipata, and Gomphonema olivaceum were most abundant.

APPENDIX B-8-1

ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-8-1

ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES, DECEMBER 1974 - JANUARY 1975

CYANOPHYTA
- Calothrix sp.
- Lyngbya sp.
- Oscillatoria sp.
- Plectonema sp.
- Ulothrix sp.

CHLOROPHYTA
- Cladophora glomerata
- Cladophora sp.
- Closterium parvulum
- Spirogyra sp.
- Zygnema sp.

CHRYSOPHYTA
- Achnanthes lanceolata
- Achnanthes minutissima
- Amphipleura pellucida
- Amphiprora ornata
- Amphora ovalis
- Amphora ovalis var. pediculus
- Amphora perpusilla
- Caloneis amphisbaena
- Caloneis bacillum
- Caloneis ventricosa
- Cocconeis pediculus
- Cocconeis placentula
- Cyclotella meneghiniana
- Cymatopleura solea
- Cymbella affinis
- Cymbella cistula
- Cymbella microcephala
- Cymbella prostrata
- Cymbella sinuata
- Cymbella sp.
- Cymbella ventricosum
- Diatoma hiemale
- Diatoma tenue
- Diatoma vulgare
- Didymosphenia geminata
- Epithemia sorex
- Epithemia zebra
- Fragilaria construens

APPENDIX B-8-1 (Continued)

CHRYSOPHYTA (Continued)
- Fragilaria crotonensis
- Fragilaria leptostauron
- Fragilaria pinnata
- Fragilaria vaucheriae
- Gomphonema intricatum
- Gomphonema olivaceum
- Gomphonema ventricosum
- Gyrosigma acuminatum
- Hannaea arcus
- Hantzschia amphioxys
- Meridion circulare
- Navicula arvensis
- Navicula cryptocephala
- Navicula minima
- Navicula mutica
- Navicula pelliculosa
- Navicula salinarum
- Navicula tripunctata
- Navicula viridula
- Navicula sp. 1
- Navicula sp. 2
- Nitzschia acicularis
- Nitzschia apiculata
- Nitzschia baccata
- Nitzschia chasei
- Nitzschia denticula
- Nitzschia dissipata
- Nitzschia frustulum
- Nitzschia linearis
- Nitzschia palea
- Nitzschia sigmoidea
- Nitzschia vermicularis
- Pleurosigma delicatulum
- Rhoicosphenia curvata
- Rhopalodia gibba
- Rhopalodia gibberula
- Surirella ovata
- Synedra amphicephala
- Synedra tenera
- Synedra ulna
- Thalassiosira fluviatilis

RBOSF PROGRESS REPORT

APPENDIX B-8-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-8-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING RBOSP AQUATIC BASELINE STUDIES, DECEMBER 1974 - JANUARY 1975.[1] (Data are expressed as cells/mm^2)

	STATION / REPLICATE				
	3 / C	4 / C	8 / C	9 / C	13 / C
CYANOPHYTA					
Calothrix sp.					
Lyngbya sp.		135			
Oscillatoria sp.					
Plectonema sp.					
Uiothrix sp.					5
CHLOROPHYTA					
Cladophora glomerata					
Cladophora sp.					
Closterium parvulum					
Spirogyra sp.					
Zygnema sp.					
CHRYSOPHYTA					
Achnanthes lanceolata	378	236	71		101
Achnanthes minutissima	229	12811	118	24	31320
Amphipleura pellucida					
Amphiprora ornata					
Amphora ovalis		7			
Amphora ovalis var. pediculus					
Amphora perpusilla					
Caloneis amphisbaena					
Caloneis bacillum	7				

[1]Stations 1,2,5-7,10-12,15-18, 20 and 21 were dry, inaccessible or frozen.

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	3 C	4 C	8 C	9 C	10 C
CHRYSOPHYTA (Continued)					
Caloneis ventricosa					
Cocconeis pediculus					
Cocconeis placentula				3	
Cyclotella meneghiniana					
Cymatopleura solea					
Cymbella affinis	74	47			34
Cymbella cistula					
Cymbella microcephala					
Cymbella prostrata					
Cymbella sinuata					
Cymbella sp.					
Cymbella ventricosa					
Diatoma hiemale	20				
Diatoma tenue					
Diatoma vulgare					
Didymosphenia geminata					
Epithemia sorex	7				
Epithemia zebra	34				
Fragilaria construens					
Fragilaria crotonensis					
Fragilaria leptostauron					
Fragilaria pinnata					
Fragilaria vaucheriae					
Gomphonema intricatum	7	507	7		1249
Gomphonema olivaceum					
Gomphonema ventricosum					
Gyrosigma acuminatum					
Hannaea arcus					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	3 C	4 C	8 C	9 C	13 C
CHRYSOPHYTA (Continued)					
Hantzschia amphioxys					
Meridion circulare		20			
Navicula arvensis		14			68
Navicula crytocephala		236		3	3544
Navicula minima					
Navicula mutica					
Navicula pelliculosa			3		
Navicula salinarum					
Navicula tripunctata	7				
Navicula viridula					34
Navicula Sp. 1					
Navicula Sp. 2					34
Nitzschia acicularis					
Nitzschia apiculata					
Nitzschia baccata			3		
Nitzschia chasei		14			
Nitzschia denticula				3	
Nitzschia dissipata					135
Nitzschia frustulum	115	27			270
Nitzschia linearis	7	310			
Nitzschia palea			3		
Nitzschia sigmoidea					
Nitzschia vermicularis					
Pleurosigma delicatulum					
Rhoicosphenia curvata					
Rhopalodia gibba					
Rhopalodia gibberula					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	3 C	4 C	8 C	9 C	13 C
CHRYSOPHYTA					
Surirella ovata	54	7			34
Synedra ampnicephala		68			236
Synedra tenera					
Synedra ulna		74	3		101
Thalassiosira fluviatilis					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	14 C	19 C	23 C	24 C	25 C
CYANOPHYTA					
Calothrix sp.	14		608	2059	
Lyngbya sp.			878		135
Oscillatoria sp.			68		
Plectonema sp.					
Ulotnrix sp.					
CHLOROPHYTA					
Cladophora glomerata					23
Cladophora sp.				304	
Closterium parvulum					
Spirogyra sp.					
Zygnema sp.					
CHRYSOPHYTA					
Achnantnes lanceolata		101	34		68
Achnantnes minutissima	9065	169	101	270	371
Amphipleura pellucida			34	34	
Amphiprora ornata					
Amphora ovalis					
Amphora ovalis var. pediculus		1		304	
Amphora perpusilla					
Caloneis amphisbaena			68	68	1
Caloneis bacillum					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	14 C	19 C	23 C	24 C	25 C
CHRYSOPHYTA (Continued)					
Caloneis ventricosa	7				
Cocconeis pediculus			270	101	
Cocconeis placentula			34		202
Cyclotella meneghiniana					34
Cymatopleura solea					
Cymbella affinis	722			641	270
Cymbella cistula					
Cymbella microcephala					
Cymbella prostrata					
Cymbella sinuata				101	
Cymbella sp.			1249		
Cymbella ventricosa					
Diatoma hiemale					
Diatoma tenue					
Diatoma vulgare	27	2	1350	1789	1991
Didymosphenia geminata					
Epithemia sorex	27		8403	2025	4489
Epithemia zebra					
Fragilaria construens					
Fragilaria crotonensis					
Fragilaria leptostauron			34		
Fragilaria pinnata					
Fragilaria vaucheriae			68		
Gomphonema intricatum	34		68		68
Gomphonema olivaceum			135	34	270
Gomphonema ventricosum			675	34	
Gyrosigma acuminatum		2			2
Hannaea arcus					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	14 C	19 C	23 C	24 C	25 C
CHRYSOPHYTA (Continued)					
Hantzschia amphioxys					101
Meridion circulare					
Navicula arvensis	7				
Navicula crytocephala	40		742	405	438
Navicula minima					
Navicula mutica					
Navicula pelliculosa					
Navicula salinarum		101	405	371	236
Navicula tripunctata	14	169	101	34	68
Navicula viridula			68	34	68
Navicula Sp. 1	74				
Navicula Sp. 2					
Nitzschia acicularis					
Nitzschia apiculata				34	
Nitzschia baccata	7				34
Nitzschia chasei					
Nitzscnia denticula	486				
Nitzschia dissipata	14	68	708	202	405
Nitzscnia frustulum	297	68	371	573	135
Nitzscnia linearis		68			1080
Nitzschia palea	7		68	68	135
Nitzschia sigmoidea				34	
Nitzscnia vermicularis					
Pleurosigma delicatulum					
Rhoicosphenia curvata				101	
Rhopalodia gibba		1		34	2
Rhopalodia gibberula					34

RBOSP PROGRESS REPORT

APPENDIX 5-8-2 (Continued)

	STATION REPLICATE				
	14 C	19 C	23 C	24 C	25 C
CHRYSOPHYTA					
Surirella ovata		169			2
Synedra amphicephala	385				
Synedra tenera					
Synedra ulna	34		236	878	337
Thalassiosira fluviatilis					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	26 C	27 C	28 A	28 B	28 C
CYANOPHYTA					
Calothrix sp.	303	1552			
Lyngbya sp.	236			641	608
Oscillatoria sp.					
Plectonema sp.					
Ulothrix sp.					
CHLOROPHYTA					
Cladophora glomerata					
Cladophora sp.		2			
Closterium parvulum					
Spirogyra sp.					
Zygnema sp.					
CHRYSOPHYTA					
Achnanthes lanceolata	34			34	
Achnanthes minutissima	34	608	34	405	742
Amphipleura pellucida					34
Amphiprora ornata					
Amphora ovalis					
Amphora ovalis var. pediculus	169	34	68	68	135
Amphora perpusilla					
Caloneis amphisbaena	1				
Caloneis bacillum					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	26 C	27 C	28 A	28 B	28 C
CHRYSOPHYTA (Continued)					
Caloneis ventricosa					
Cocconeis pediculus		34			34
Cocconeis placentula				68	304
Cyclotella meneghiniana					135
Cymatopleura solea	34	2			
Cymbella affinis	304	68		101	608
Cymbella cistula					
Cymbella microcephala					
Cymbella prostrata					
Cymbella sinuata					34
Cymbella sp.					
Cymbella ventricosa					
Diatoma hiemale					
Diatoma tenue					
Diatoma vulgare	1316	675	34		876
Didymosphenia geminata					
Epithemia sorex	2396	3712	506		3476
Epithemia zebra					
Fragilaria construens					
Fragilaria crotonensis					
Fragilaria leptostauron	34				
Fragilaria pinnata	34				
Fragilaria vaucheriae	68				
Gomphonema intricatum				68	135
Gomphonema olivaceum	68	135		34	337
Gomphonema ventricosum	34				135
Gyrosigma acuminatum	135	2			
Hannaea arcus					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	26 C	27 C	28 A	28 B	28 C
CHRYSOPHYTA (Continued)					
Hantzschia amphioxys					
Mericion circulare					
Navicula arvensis					
Navicula crytocephala	641	776		34	405
Navicula minima					
Navicula mutica					
Navicula pelliculosa					
Navicula salinarum	641	68		34	270
Navicula tripunctata	202	68			
Navicula viridula	101	34			
Navicula Sp. 1					
Navicula Sp. 2					
Nitzschia acicularis					
Nitzschia apiculata					
Nitzschia baccata					
Nitzschia cnasei	68				
Nitzschia denticula				34	
Nitzschia dissipata	1046	202			
Nitzschia frustulum	472	101	34	101	202
Nitzschia linearis			1		
Nitzschia palea	68				
Nitzschia sigmoidea	4				
Nitzschia vermicularis					
Pleurosigma delicatulum					
Rhoicosphenia curvata					
Rhopalodia gibba					
Rhopalodia gibberula					3

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	26 C	27 C	28 A	28 B	28 C
CHRYSOPHYTA					
Surirella ovata	34				1
Synedra amphicephala					
Synedra tenera					
Synedra ulna	776	135	3	1	2
Thalassiosira fluviatilis	68	135			

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	29 C	30 C	31 C	32 C	33 C
CYANOPHYTA					
Calothrix sp.	354	169		472	1384
Lyngbya sp.	388	236	304	810	540
Oscillatoria sp.	84				
Plectonema sp.	84				
Ulothrix sp.					
CHLOROPHYTA					
Cladophora glomerata					
Cladophora sp.			38	2	
Closterium parvulum					
Spirogyra sp.					
Zygnema sp.					
CHRYSOPHYTA					
Achnanthes lanceolata		34	540		34
Achnanthes minutissima	8049	135	641	34	101
Amphipleura pellucida					
Amphiprora ornata					
Amphora ovalis					
Amphora ovalis var. pediculus	34	68	68	1282	101
Amphora perpusilla					
Caloneis amphisbaena					34
Caloneis bacillum					

2.4.4.62

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	29 C	30 C	31 C	32 C	33 C
CHRYSOPHYTA (Continued)					
Caloneis ventricosa					
Cocconeis pediculus		202		34	34
Cocconeis placentula	17		101		
Cyclotella meneghiniana	17			68	34
Cymatopleura solea					
Cymbella affinis	1266	742	202	236	573
Cymbella cistula					
Cymbella microcephala					
Cymbella prostrata					
Cymbella sinuata					
Cymbella sp.					
Cymbella ventricosa					
Diatoma hiemale					
Diatoma tenue					
Diatoma vulgare	338	1620	776	1080	2228
Didymosphenia geminata					
Epithemia sorex	456	3476	2329	641	3274
Epithemia zebra					
Fragilaria construens				101	68
Fragilaria crotonensis					
Fragilaria leptostauron					68
Fragilaria pinnata					
Fragilaria vaucheriae	17	34		34	
Gomphonema intricatum	338	101	34		101
Gomphonema olivaceum	51	169	5	68	270
Gomphonema ventricosum		270	34		169
Gyrosigma acuminatum		1	1	1	
Hannaea arcus					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	29 C	30 C	31 C	32 C	33 C
CHRYSOPHYTA (Continued)					
Hantzschia amphioxys					
Meridion circulare					
Navicula arvensis					34
Navicula crytocephala	709	1282	169	202	675
Navicula minima					
Navicula mutica					
Navicula pelliculosa					
Navicula salinarum	51	742	101	135	202
Navicula tripunctata	118	641		135	68
Navicula viridula	17				68
Navicula Sp. 1					
Navicula Sp. 2					
Nitzschia acicularis					
Nitzschia apiculata		34			
Nitzschia baccata		34			
Nitzschia chasei	51	135			169
Nitzschia denticula	17			304	
Nitzschia dissipata	878	1451	540		945
Nitzschia frustulum	236	708		169	641
Nitzschia linearis			34		
Nitzschia palea	51		101	34	
Nitzschia sigmoidea		34		1	1
Nitzschia vermicularis					
Pleurosigma delicatulum					
Rhoicosphenia curvata				34	
Rhopalodia gibba		34	3		
Rhopalodia gibberula					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	29 C	30 C	31 C	32 C	33 C
CHRYSOPHYTA					
Surirella ovata		68		34	
Synedra amphicephala					
Synedra tenera					
Synedra ulna	51	843	34		337
Thalassiosira fluviatilis					

2.4.4.65

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	34 C	35 C	___ _	___ --	___ _
CYANOPHYTA					
Calothrix sp.		776			
Lyngbya sp.	1654	3946			
Oscillatoria sp.		202			
Plectonema sp.		68			
Microthrix sp.					
CHLOROPHYTA					
Cladophora glomerata					
Cladophora sp.		9			
Closterium parvulum					
Spirogyra sp.					
Zygnema sp.		3			
CHRYSOPHYTA					
Achnanthes lanceolata					
Achnanthes minutissima		68			
Amphipleura pellucida					
Amphiprora ornata					
Amphora ovalis					
Amphora ovalis var. pediculus					
Amphora perpusilla					
Caloneis amphisbaena					
Caloneis bacillum					

2.4.4.66

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	34 C	35 C	___ _	___ _	___ _
CHRYSOPHYTA (Continued)					
Caloneis ventricosa					
Cocconeis pediculus					
Cocconeis placentula	101				
Cyclotella menegniniana					
Cymatopleura solea					
Cymbella affinis	68	236			
Cymbella cistula					
Cymbella microcephala					
Cymbella prostrata					
Cymbella sinuata					
Cymbella sp.					
Cymbella ventricosa	34				
Diatoma hiemale					
Diatoma tenue					
Diatoma vulgare	135	1418			
Didymosphenia geminata					
Epithemia sorex	1924	1721			
Epithemia zebra					
Fragilaria construens		68			
Fragilaria cretonensis					
Fragilaria leptostauron					
Fragilaria pinnata					
Fragilaria vaucheriae		34			
Gomphonema intricatum		101			
Gomphonema olivaceum	34	34			
Gomphonema ventricosum		101			
Gyrosigma acuminatum		1			
Hannaea arcus					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	34 C	35 C	— —	— —	— —
CHRYSOPHYTA (Continued)					
Hantzschia amphioxys					
Meridion circulare					
Navicula arvensis					
Navicula crytocephala	202	405			
Navicula minima					
Navicula mutica					
Navicula pelliculosa					
Navicula salinarum		337			
Navicula tripunctata		236			
Navicula viridula	68	68			
Navicula Sp. 1					
Navicula Sp. 2					
Nitzschia acicularis					
Nitzschia apiculata					
Nitzschia baccata					
Nitzschia chasei		371			
Nitzschia denticula					
Nitzschia dissipata	34	1114			
Nitzschia frustulum		472			
Nitzschia linearis	2				
Nitzschia palea					
Nitzschia sigmoidea					
Nitzschia vermicularis					
Pleurosigma delicatulum					
Rhoicosphenia curvata		68			
Rhopalodia gibba					
Rhopalodia gibberula					

RBOSP PROGRESS REPORT

APPENDIX B-8-2 (Continued)

	STATION REPLICATE				
	34 C	35 C	___ _	___ _	___ _
CHRYSOPHYTA					
Surirella ovata					
Synedra amphicephala					
Synedra tenera					
Synedra ulna		68			
Thalassiosira fluviatilis					

2.4.4.69

RBOSP PROGRESS REPORT

APPENDIX B-8-3

DRY WEIGHT AND ORGANIC WEIGHT OF PERIPHYTON
DURING RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-8-3

DRY WEIGHT AND ORGANIC WEIGHT OF PERIPHYTON DURING RBOSP AQUATIC BASELINE STUDIES, DECEMBER 1974 - JANUARY 1975.[1] (Data are expressed as grams/50 cm^2)

Station Replicate	Dry Weight(g)	Organic Weight(g)
3-A	0.2912	0.1097
3-B	3.3916	0.7343
3-C	1.3443	0.2521
4-A	0.8454	0.1556
4-B	0.3813	0.1119
4-C	0.7903	0.1610
5-A	Insufficient substrate available for sampling	
5-B	" " " "	"
5-C	" " " "	"
8-A	0.0268	0.0071
8-B	0.0314	0.0056
8-C	0.0246	0.0059
9-A	0.1365	0.0354
9-B	0.2245	0.0412
9-C	0.1469	0.0206
13-A	1.1705	0.1425
13-B	0.7633	0.1220
13-C	0.9460	0.1289
14-A	2.0377	0.0962
14-B	1.3428	0.0544
14-C	1.7130	0.0583
19-A	1.8396	0.3861
19-B	2.4238	0.7154
19-C	0.4259	0.0541
23-A	13.6957	10.5685
23-B	1.2935	0.1791
23-C	12.6723	10.5464
24-A	13.9391	0.9614
24-B	8.0349	0.5813
24-C	9.5342	0.7675
25-A	4.2855	0.5402
25-B	4.8328	0.5441
25-C	4.7897	0.4512
26-A	15.4880	0.8151
26-B	13.5988	0.6913
26-C	13.3370	0.8089

[1]Stations 1,2,6,7,10-12,15-18, and 20-22 were dry, frozen, or inaccessible.

APPENDIX B-8-3 (Continued)

Station Replicate	Dry Weight(g)	Organic Weight(g)
27-A	7.3936	0.6107
27-B	10.1851	0.8290
27-C	5.4694	0.4153
28-A	1.0274	0.1104
28-B	1.7369	0.1901
28-C	1.7229	0.2001
29-A	16.0412	0.9456
29-B	20.8648	1.0563
29-C	7.6938	0.2895
30-A	Lab error[2]	---
30-B	" "	---
30-C	" "	---
31-A	" "	---
31-B	" "	---
31-C	" "	---
32-A	9.8338	0.7105
32-B	2.6846	0.2686
32-C	3.3648	0.3821
33-A	20.9067	1.3063
33-B	5.0425	0.3689
33-C	7.9944	0.5731
34-A	6.5314	0.4698
34-B	4.0386	0.2496
34-C	3.4755	0.2161
35-A	1.6348	0.1539
35-B	3.8887	0.3385
35-C	3.0651	0.2538

[2]Samples accidentally destroyed (broken) in the laboratory.

RBOSP PROGRESS REPORT

APPENDIX B-9-1

ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-9-1

ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975

CYANOPHYTA
- Calothrix sp.
- Oscillatoria sp.
- Plectonema sp.

CHLOROPHYTA
- Cladophora sp.
- Ulothrix sp.

CHRYSOPHYTA
- Achnanthes lanceolata
- Achnanthes minutissima
- Amphiprora alata
- Amphora ovalis
- Amphora ovalis var. pediculus
- Amphora sp. 1
- Caloneis amphisbaena
- Caloneis bacillum
- Ceratoneis arcus
- Cocconeis pediculus
- Cocconeis placentula
- Cyclotella meneghiniana
- Cymatopleura solea
- Cymbella affinis
- Cymbella sinuata
- Cymbella ventricosa
- Diatoma hiemale
- Diatoma tenue var. elongatum
- Diatoma vulgare
- Epithemia sorex
- Fragilaria vaucheriae
- Gomphonema intricatum
- Gomphonema olivaceum
- Gomphonema ventricosum
- Gyrosigma acuminatum
- Hantzschia amphioxys
- Mastogolia smithii
- Melosira sp.
- Meridion circulare
- Navicula arvensis
- Navicula capitata
- Navicula cryptocephala

Navicula gregaria
Navicula minima
Navicula pelliculosa
Navicula radiosa
Navicula salinarum
Navicula tripunctata
Navicula viridula
Navicula sp. 1
Navicula sp. 2
Nitzschia acicularis
Nitzschia apiculata
Nitzschia chasei
Nitzschia denticula
Nitzschia dissipata
Nitzschia frustulum
Nitzschia linearis
Nitzschia palea
Nitzschia sigmoidea
Pinnularia subcapitata
Pinnularia brebissonii
Pleurosigma delicatulum
Rhoicosphenia curvata
Rhopalodia gibba
Rhopalodia gibberula
Surirella ovalis
Surirella ovata
Synedra amphicephala
Synedra ulna
Thalossiosira fluviatilis

RBOSP PROGRESS REPORT

APPENDIX B-9-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-9-2

DENSITIES OF ALGAL TAXA OBSERVED IN THE PERIPHYTON DURING RBOSP AQUATIC BASELINE STUDIES, APRIL 1975.[1] (Data are expressed as cells/mm2)

	STATION REPLICATE				
	1 A	2 A	3 A	4 A	5 A
CYANOPHYTA					
Calothrix sp.		88			
Oscillatoria sp.					
Plectonema sp.				47	
CHLOROPHYTA					
Cladophora sp.					
Ulothrix sp.		40			
CHRYSOPHYTA					
Achnanthes lanceolata					472
Achnantnes minutissima	1296	3200	5818	472	4219
Amphiprora alata					
Amphora ovalis					68
Amphora ovalis var. pediculus					
Amphora sp. 1					
Caloneis amphisbaena					
Caloneis bacillum					
Hanneae arcus					
Cocconeis pediculus					
Cocconeis placentula					

[1]Stations 6,10-12, and 15-18 were dry at the time of sampling.

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	1 A	2 A	3 A	4 A	5 A
Cyclotella meneghiniana					
Cymatopleura solea					
Cymbella affinis		27	18		
Cymbella sinuata					
Cymbella ventricosa					
Diatoma hiemale					
Diatoma tenue var. elongatum					101
Diatoma vulgare					
Epithemia sorex					34
Fragilaria vaucheriae					
Gomphonema intricatum	7	14	63	7	2496
Gomphonema olivaceum	7				34
Gomphonema ventricosum					
Gyrosigma acuminatum					1
Hantzschia amphioxys					
Melosira sp.					68
Meridion circulare					1012
Navicula arvensis	14	40	22	7	135
Navicula capitata					68
Navicula cryptocephala	7	7	27	3	405
Navicula gregaria					
Navicula minima					34
Navicula pelliculosa				3	101
Navicula radiosa					34
Navicula salinarum					
Navicula tripunctata	7				68
Navicula viridula	61			14	
Navicula sp. 1					34
Navicula sp. 2					

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	1	2	3	4	5
	A	A	A	A	A
Nitzschia acicularis				3	68
Nitzschia apiculata					
Nitzschia chasei					
Nitzschia denticula	304			3	
Nitzschia dissipata					34
Nitzschia frustulum			4		573
Nitzschia linearis				20	34
Nitzschia palea		14	18		169
Nitzschia sigmoidea					1
Pinnularia subcapitata					68
Pinnularia brebissonii					
Pleurosigma delicatulum					3
Rhoicosphenia curvata					
Rhopalodia gibba					
Rhopalodia gibberula					
Surirella ovata					1282
Synedra amphicephala	7	81	198	3	810
Synedra ulna					
Thalassiosira fluviatilis					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION / REPLICATE				
	7 / A	8 / A	9 / A	13 / A	14 / A
CYANOPHYTA					
Calothrix sp.		68	9		101
Oscillatoria sp.			18		
Plectonema sp.	1222	310			
CHLOROPHYTA					
Cladophora sp.					
Ulothrix sp.					
CHRYSOPHYTA					
Achnanthes lanceolata	14	148	9	495	573
Achnanthes minutissima	1654	12622	360	4838	6446
Amphiprora alata					
Amphora ovalis					
Amphora ovalis var. pediculus					
Amphora sp. 1					
Caloneis amphisbaena				22	
Caloneis bacillum					
Hanneae arcus					
Cocconeis pediculus					
Cocconeis placentula					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION / REPLICATE				
	7 / A	8 / A	9 / A	13 / A	14 / A
Cyclotella meneghiniana					
Cymatopleura solea					506
Cymbella affinis					34
Cymbella sinuata					
Cymbella ventricosa					
Diatoma hiemale					
Diatoma tenue var. elongatum					
Diatoma vulgare			14		34
Epithemia sorex					34
Fragilaria crotonensis					101
Fragilaria vaucheriae		1876		68	68
Gomphonema intricatum	27				101
Gomphonema olivaceum					
Gomphonema ventricosum			4	1	34
Gyrosigma acuminatum					
Hantzschia amphioxys					34
Mastogloia smithii					
Melosira sp.			14		
Meridion circulare		810		112	270
Navicula arvensis					
Navicula capitata	7		18	855	608
Navicula cryptocephala					
Navicula gregaria					
Navicula minima				22	169
Navicula pelliculosa					
Navicula radiosa				45	
Navicula salinarum					34
Navicula tripunctata					438
Navicula viridula					
Navicula sp. 1	7				68
Navicula sp. 2					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	7	8	9	13	14
	A	A	A	A	A
Nitzschia acicularis					
Nitzschia apiculata					
Nitzschia chasei					
Nitzschia denticula	14			135	2295
Nitzschia dissipata					
Nitzschia frustulum		27	4	90	2092
Nitzschia linearis	14		4	22	
Nitzschia palea	7			45	
Nitzschia sigmoidea					
Pinnularia subcapitata					
Pinnularia prebissonii					1
Pleurosigma delicatulum					
Rhoicosphenia curvata					
Rhopalodia gibba					
Rhopalodia gibberula					
Surirella ovalis					
Stephanodiscus tenuis					135
Surirella ovata			4	45	
Synedra amphicephala	7			22	304
Synedra ulna				1	34
Thalassiosira fluviatilis					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	19 A	20 A	21 A	22 A	23 A
CYANOPHYTA					
Calothrix sp.					1012
Oscillatoria sp.	45				
Plectonema sp.					
CHLOROPHYTA					
Cladophora sp.					12
Ulothrix sp.					
CHRYSOPHYTA					
Achnanthes lanceolata					
Achnanthes minutissima	45	1890	1890	5643	810
Amphiprora alata			14		
Amphora ovalis					
Amphora ovalis var. pediculus				27	338
Amphora sp. 1					
Caloneis amphisbaena					
Caloneis bacillum	22				
Hannaea arcus					
Cocconeis pediculus					
Cocconeis placentula			14	94	

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	19 A	20 A	21 A	22 A	23 A
Cyclotella meneghiniana			14	94	
Cymatopleura solea					1
Cymbella affinis		148		419	135
Cymbella sinuata					270
Cymbella ventricosa					68
Diatoma hiemale					
Diatoma tenue var. elongatum					
Diatoma vulgare					270
Epithemia sorex	22			27	1080
Fragilaria crotonensis					
Fragilaria vaucheriae	22	148	283	405	202
Gomphonema intricatum	22			27	68
Gomphonema olivaceum					135
Gomphonema ventricosum					
Gyrosigma acuminatum					
Hantzschia amphioxys					
Mastogloia smithii					
Melosira sp.					
Mericion circulare					
Navicula arvensis	135		68		68
Navicula capitata					
Navicula cryptocephala	652	27		54	2902
Navicula gregaria				14	
Navicula minima					
Navicula pelliculosa		68	6385	1580	
Navicula radiosa					
Navicula salinarum					202
Navicula tripunctata					2295
Navicula viridula	22				4050
Navicula sp. 1		14	14		
Navicula sp. 2	45				

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	19 A	20 A	21 A	22 A	23 A
Nitzschia acicularis					
Nitzschia apiculata			14		
Nitzschia cnasei					
Nitzschia denticula				14	
Nitzschia dissipata	22				1688
Nitzschia frustulum	202	14	40	54	135
Nitzschia linearis					
Nitzschia palea	45	27	94	31	
Nitzschia sigmoidea					
Pinnularia subcapitata					
Pinnularia brebissonii		14			
Pleurosigma delicatulum					
Rhoicosphenia curvata					
Rhopalodia gibba	45				
Rhopalodia gibberula	225				
Surirella ovalis				14	
Stephanodiscus tenuis					
Surirella ovata	180	94	446	446	68
Synedra ampnicephala	22	27			
Synedra ulna					
Thalassiosira fluviatilis					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	24 A	25 A	26 A	27 A	28 A
CYANOPHYTA					
Calothrix sp.	405	1755		202	
Oscillatoria sp.					
Plectonema sp.					
CHLOROPHYTA					
Cladophora sp.	20	405	1		
Ulothrix sp.					
CHRYSOPHYTA					
Achnanthes lanceolata			17	270	
Acnnanthes minutissima	202		84	270	17
Ampniprora alata					
Amonora ovalis					
Amphora ovalis var. pediculus	608	405	51	338	
Amonora sp. 1					34
Caloneis amphisbaena					
Caloneis bacillum					
Hanneae arcus					
Cocconeis pediculus	68	68		202	
Cocconeis placentula					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	24 A	25 A	26 A	27 A	28 A
Cyclotella meneghiniana				68	
Cymatopleura solea				2	
Cymbella affinis	473	810	219	135	101
Cymbella sinuata			17	338	
Cymbella ventricosa	135	68		135	51
Diatoma hiemale					
Diatoma tenue var. elongatum					
Diatoma vulgare	135		17	202	
Epithemia sorex	338	2768	135	540	34
Fragilaria crotonensis					
Fragilaria vaucheriae		202		202	
Gomphonema intricatum	68			405	
Gomphonema olivaceum	270	675	371	945	203
Gomphonema ventricosum		135			
Gyrosigma acuminatum					
Hantzschia amphioxys				68	
Mastogloia smithii					
Melosira sp.					
Meridion circulare					
Navicula arvensis					
Navicula capitata					
Navicula cryptocephala	1553	3308	945	2430	1181
Navicula gregaria					
Navicula minima					
Navicula pelliculosa				68	
Navicula radiosa					
Navicula salinarum	68	202	51	270	84
Navicula tripunctata	1215	10260	321	1350	152
Navicula viridula	1958	6075	2211	2970	2801
Navicula sp. 1					
Navicula sp. 2					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	24	25	26	27	28
	A	A	A	A	A
Nitzschia acicularis					
Nitzschia apiculata					
Nitzschia chasei		270			
Nitzschia denticula					
Nitzschia dissipata	1148	1822	118	945	
Nitzschia frustulum	202	202		270	17
Nitzschia linearis					
Nitzschia palea			17	68	
Nitzschia sigmoidea	1	2		1	
Pinnularia subcapitata					
Pinnularia brebissonii					
Pleurosigma delicatulum					
Rhoicosphenia curvata					
Rhopalodia gibba	1	68			
Rhopalodia gibberula					
Surirella ovalis					
Stephanodiscus tenuis					
Surirella ovata		202		1080	84
Synedra amphicephala					
Synedra ulna				135	
Thalossiosira fluviatilis				68	

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	29 A	30 A	31 A	32 A	33 A
CYANOPHYTA					
Calothrix sp. Oscillatoria sp. Plectonema sp.	2464	1384	1148	360	169
CHLOROPHYTA					
Cladophora sp. Ulothrix sp.		169			
CHRYSOPHYTA					
Achnanthes lanceolata				22	
Achnantnes minutissima	1316	101	34	45	
Amphiprora alata					
Amphora ovalis					
Amphora ovalis var. pediculus	68	506	135		68
Amphora sp. 1		34			
Caloneis amphisbaena		34			
Caloneis bacillum		101			
Hanneae arcus				1	
Cocconeis pediculus					
Cocconeis placentula		34			

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	29 A	30 A	31 A	32 A	33 A
Cyclotella meneghiniana		34			
Cymatopleura solea					
Cymbella affinis	34	135	34	22	270
Cymbella sinuata		34			
Cymbella ventricosa		68		68	
Diatoma hiemale					
Diatoma tenue var. elongatum					
Diatoma vulgare		34			405
Epithemia sorex	2-92	3206	2228	2452	337
Fragilaria crotonensis					
Fragilaria vaucheriae	34				
Gomphonema intricatum	68	304	169		506
Gomphonema olivaceum		34			
Gomphonema ventricosum					34
Gyrosigma acuminatum					
Hantzschia amphioxys					
Mastogloia smithii					
Melosira sp.					
Meridion circulare					
Navicula arvensis	68	68			
Navicula capitata					
Navicula cryptocephala	169	1620	776	113	742
Navicula gregaria					
Navicula minima					
Navicula pelliculosa					
Navicula radiosa					
Navicula salinarum	34	34		22	
Navicula tripunctata	135	2126	405	428	169
Navicula viridula	135	1654	708	68	708
Navicula sp. 1		68			
Navicula sp. 2					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE				
	29 A	30 A	31 A	32 A	33 A
Nitzschia acicularis					
Nitzschia actculata					
Nitzschia crasei		438	337		
Nitzschia denticula	34	34	34		
Nitzschia dissipata	101	1654	1080	68	911
Nitzschia frustulum	135	675	135		68
Nitzschia linearis					
Nitzschia palea		34			
Nitzschia sigmoidea					
Pinnularia subcapitata					
Pinnularia brebissonii					
Pleurosigma delicatulum					
Rhoicosphenia curvata					
Rhopalodia gibba		101	68		
Rhopalodia gibberula		34			
Surirella ovalis					
Stephanodiscus tenuis					
Surirella ovata	34	236			68
Synedra amphicephala					
Synedra ulna					
Thalassiosira fluviatilis					

RBOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION 34 REPLICATE A	STATION 35 REPLICATE A
CYANOPHYTA		
Calothrix sp. Oscillatoria sp. Plectonema sp.	827	1350
CHLOROPHYTA		
Cladophora sp. Ulothrix sp.		
CHRYSOPHYTA		
Achnanthes lanceolata Achnanthes minutissima	93	202
Amphiprora alata		
Amphora ovalis		
Amphora ovalis var. pediculus	110	945
Amphora sp. 1		
Caloneis amphisbaena		1
Caloneis bacillum		
Hanneae arcus	8	
Coccoreis pediculus		
Cocconeis placentula		

REOSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION / REPLICATE				
	34 / A	35 / A	—	—	—
Cyclotella meneghiniana					
Cymatopleura solea					
Cymbella affinis					
Cymbella sinuata					
Cymbella ventricosa	34	270			
Diatoma hiemale	8				
Diatoma tenue var. elongatum					
Diatoma vulgare		68			
Epithemia sorex	68	202			
Fragilaria crotonensis					
Fragilaria vaucheriae		135			
Gomphonema intricatum					
Gomphonema olivaceum	84	2295			
Gomphonema ventricosum					
Gyrosigma acuminatum					
Hantzschia amphioxys					
Mastogloia smithii					
Melosira sp.					
Mericion circulare					
Navicula arvensis	8				
Navicula capitata					
Navicula cryptocephala	262	2160			
Navicula gregaria					
Navicula minima	25	270			
Navicula pelliculosa					
Navicula radiosa					
Navicula salinarum	17				
Navicula tripunctata	118	1755			
Navicula viridula	397	2768			
Navicula sp. 1					
Navicula sp. 2					

2.4.4.93

REDSP PROGRESS REPORT

APPENDIX B-9-2 (Continued)

	STATION REPLICATE	
	34 A	35 A
Nitzschia acicularis		
Nitzschia apiculata		
Nitzschia cnasei		
Nitzschia denticula		
Nitzschia dissipata	101	473
Nitzschia frustulum	68	135
Nitzschia linearis		
Nitzschia palea	8	135
Nitzschia sigmoidea		
Pinnularia subcapitata		
Pinnularia brebissonii		
Pleurosigma delicatulum		
Rhoicosphenia curvata		
Rhopalodia gibba		
Rhopalodia gibberula		
Surirella ovalis		
Stephanodiscus tenuis		
Surirella ovata		68
Synedra amphicephala		
Synedra ulna		1
Tralossiosira fluviatilis		

RBOSP PROGRESS REPORT

APPENDIX B-10-1

CHIRONOMIDAE AND OLIGOCHAETA TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-10-1

CHIRONOMIDAE AND OLIGOCHAETA TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES, DECEMBER 1974 - JANUARY 1975

- Annelida
  - Oligochaeta
    - Enchytraeidae
    - Naididae
      - *Chaetogaster diastrophus*
      - *Nais behningi*
      - *Nais elinguis*
      - *Nais* sp.
    - Tubificidae
      - *Limnodrilus claparedeianus*
      - *Limnodrilus hoffmeisteri*
      - *Limnodrilus spiralis*
      - *Limnodrilus udekemianus*
      - *Tubifex* sp.
      - Immature tubificids w/o capilliform chaetae
      - Immature tubificids w capilliform chaetae

- Insects
  - Diptera
    - Chironomidae
      - Tanypodinae
        - *Conchapelopia*
        - *Psectrotanypus*
        - Pentaneurini
      - Diamesinae
        - *Diamesa*
        - *Monodiamesa*
        - *Odontomesa*
        - *Pseudodiamesa* c.f. *pertinax*
        - *Pseudodiamesa* sp. 1
      - Orthocladiinae
        - *Chaetocladius*
        - *Corynoneura*
        - *Cricotopus*
        - *Cricotopus* (*Cricotopus*)
        - *Cricotopus* (*Cricotopus*) *tremulus* group
        - *Diplocladius*
        - *Eukiefferiella*
        - *Gymnometriocnemus terrestris* group
        - *Holocladius*
        - *Metriocnemus*
        - *Orthocladius*
        - *Paracladius*

Parakiefferiella
Parametriocnemus
Paraphaenocladius
Pseudosmittia
Thienemanniella
Chironominae
Chironomini
Cryptochironomus
Microtendipes
Paratendipes
Phaenopsectra
Polypedilum fallax group
Polypedilum tripodura group
Stictochironomus
Tanytarsini
Micropsectra
Rheotanytarsus
Tanytarsus

RBOSP PROJECT RECORD

APPENDIX B-10-2

DENSITIES OF CHIRONOMIDAE AND OLIGOCHAETA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-10-2

DENSITIES OF CHIRONOMIDAE AND OLIGOCHAETA OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES, DECEMBER 1974 - JANUARY 1975.[1] (Data are expressed as organisms/m^2)

	STATION / REPLICATE					
	3			4		
Sampling Method[2]	S			S		
	A	B	C	A	B	C
Chironomidae						
Tanypodinae						
Conchapelopia						
Pentaneurini	39					
Psectrotanypus		39				20
Podonominae						
Boreochlus						
Diamesinae	39	39	1812	1024	532	
Diamesa						
Monodiamesa						
Odontomesa						
Pseudodiamesa c.f. pertinax	18	79				
Pseudodiamesa Sp. 1	39				20	20
Orthocladiinae	118	39	39	749	99	39
Chaetocladius	1084	1714	256	414		39
Corynoneura						
Cricotopus						
Cricotopus (Cricotopus)						
Cricotopus (Cricotopus) tremulus gp.						
Diplocadius			20			
Eukiefferiella	197	79		2561	433	571
Gymnometriocnemus terrestris gp.						

[1]Stations 1,2,6,7,10-12, and 27-32 were dry, inaccessible, or frozen

[2]Sampling Methods: S = Modified Surber; DF = D-Frame

APPENDIX B-10-2 (Continued)

Sampling Method	STATION REPLICATE 3 S A	3 S B	3 S C	4 S A	4 S B	4 S C
Helocladius						
Metriocnemus						
Orthocladius	1320	709	296	749	79	79
Paracladius						
Paradiefferiella						
Parametriocnemus			20	906	118	158
Parapraenocladius	414	39	1320	906	217	158
Pseudosmittia						
Thienemanniella			20	79		
Chironominae						
Cryptochironomus						
Microtendipes						
Paratendipes						
Phaenospectra						
Polypedilum fallax gp.				79		
Polypedilum tripodura gp.						
Stictochironomus						
Tanytarsini						
Micropsectra		1084	236	158		
Rheotanytarsus	39				20	
Tanytarsus						
Oligochaeta						
Enchytraedae	20			20		20
Naididae					453	
Chaetogaster distrophus						
Nais behningi						
Nais elinguis	670	20		512	158	99
Nais sp.						

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION / REPLICATE					
	3			4		
	A	S B	C	A	S B	C
Tubificidae						
Limnodrilus claparedeianus						
Limnodrilus hoffmeisteri						
Limnodrilus spiralis						
Limnodrilus udekemianus						
Tubifex sp.						
Immature tubificids w/o capilliform chaetae						
Immature tubificids w capilliform chaetae						
Unidentified						

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 5 REPLICATE A[3]	5 B	5 C	8 A	8 B	8 C
Chironomidae						
Tanypodinae						
Conchapelopia		355	394			
Pentaneurini						
Psectrotanypus		118	118			
Podonominae						
Borecchlus						
Diamesinae						
Diamesa		39				20
Monodiamesa						
Odontomesa			20			
Pseudodiamesa c.f. pertinax			79			59
Pseudodiamesa Sp. 1		59	20	118		20
Orthocladiinae	453	2364	20			
Cnaetocladius				99		
Corynoneura						
Cricotopus						
Cricotopus (Cricotopus)						
Cricotopus (Cricotopus) tremulus gp.						
Diplocadius	20	39	;58	138		59
Eukiefferiella				20		
Gymnometriocremus terrestris gp.						

2.4.5.112

ABOSP PROGRESS REPORT

APPENDIX B-10-2 (Continuec)

Sampling Method	STATION 5 REPLICATE A	5 S B	5 C	STATION 8 REPLICATE A	8 S B	8 C
Eukiefferiella		118	39			
Metriocnemus				39	20	20
Orthocladius						
Paracladius						
Paradiefferiella		99		256	670	414
Parametriocnemus				138	99	158
Paraphaenocladius						
Pseudosmittia				20	59	20
Thienemanniella						
Chironominae						
Cryptochironomus						
Microtendipes			59			
Paratendipes						
Phaenospectra						
Polypedilum fallax gp.						
Polypedilum tripodura gp.						
Stictochironomus						
Tanytarsini		1340	39			
Micropsectra						
Rheotanytarsus						
Tanytarsus						
Oligochaeta				118		
Enchytraedae						
Naididae						
Chaetogaster diastrophus						
Nais behningi				453	2187	
Nais elinguis						
Nais sp.						

RBOOP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION / REPLICATE					
	5			8		
	A	S B	C	A	S B	C
Tubificidae						
Limnodrilus claparedeianus						
Limnodrilus hoffmeisteri						
Limnodrilus spiralis						
Limnodrilus udekemianus						
Tubifex sp.						
Immature tubificids w/o capilliform chaetae		20				
Immature tubificids w capilliform chaetae						
Unidentified						

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 9 REPLICATE A	9 B	9 C	13 A	13 B	13 C
Chironomidae						
Tanypodinae						
Conchapelopia			20			
Pentaneurini						
Psectrotanypus		59				
Podonominae						
Boreochlus						
Diamesinae						
Diamesa		965	374	906	276	355
Moncdiamesa						
Odontomesa						
Pseudodiamesa c.f. pertinax						
Pseudodiamesa Sp. 1			20	177	138	355
Orthocladiinae	177	118	59	729	138	1281
Chaetocladius						177
Corynoneura	20		20			177
Cricotopus						
Cricotopus (Cricotopus)						
Cricotopus (Cricotopus) tremulus gp.	39	177				
Diplocadius						
Eukiefferiella	236	394	79	2561	946	906
Gymnometriocnemus terrestris gp.						

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 9 REPLICATE A	9 S B	9 C	13 A	13 S B	13 C
Heloclad[illegible]s	20					
Metriocnemus						
Orthocladius	1044	1832	9850	9712	4827	10047
Paracladius	20	118				
Paradiefferiella	99			177		
Parametriccnemus	79	394	39	1103	1202	906
Parapnaerocladius	177	1714	335	6048	5358	6383
Pseudosmitta						177
Thienemanniella	20	177	99			
Chironominae						
Cryptochironomus						
Microtendipes						
Paratendipes						
Phaenospectra					138	
Polypedilum fallax gp.						
Polypedilum tripocura gp.						
Stictochironomus						
Tanytarsini					138	
Micropsectra	20	236	39	177	276	552
Rheotanytarsus						
Tanytarsus						
Oligochaeta						
Enchytraedae			20	20		59
Naididae						
Chaetogaster distrophus						
Nais behningi						
Nais elinguis						
Nais sp.	79	453	79	4393	5200	5772

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 9 REPLICATE A	9 B	9 C	13 A	13 B	13 C
Tubificidae						
Limnodrilus claparedeianus						
Limnodrilus hoffmeisteri						
Limnodrilus spiralis						
Limnodrilus udekemianus						
Tubifex sp.						
Immature tubificids w/o capilliform chaetae						39
Immature tubificids w capilliform chaetae						
Unidentified						
Lumbriculidae		20				

2.4.5.11

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 19 S REPLICATE A	19 S B	19 S C	STATION 24 DF REPLICATE A	24 DF B	24 DF C
Chironomidae						
Tanypodinae						
Conchapelopia			99	2	2	4
Pentaneurini						
Psectrotanypus						
Podonominae						
Boreochlus						
Diamesinae						
Diamesa	453		177	1	1	4
Monodiamesa				5	4	
Odontomesa						
Pseudodiamesa c.f. pertinax						
Pseudodiamesa Sp. 1						
Ortnocladiinae	2699		99			
Chaetocladius						
Corynoneura						
Cricotopus						
Cricotopus (Cricotopus)				2		
Cricotopus (Cricotopus) tremulus gp.						
Diplocladius						
Eukiefferiella	5615	4039	177	4	2	4
Gymnometriocnemus terrestris gp.						

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 19 REPLICATE A	19 B	19 C	STATION 24 REPLICATE A	24 B	24 C
		S			DF	
Holocladius	20					
Metriocnemus						
Orthocladius	71866	50787	6816	2	3	6
Paracladius				4	5	
Parakiefferiella						
Parametriocnemus	5161			1		
Parapnaenocladius	1793	2304	473	5	10	7
Pseudosmitta						
Thienemanniella						
Chironominae						
Cryptochironomus					1	
Microtendipes	217			5	1	
Paratendipes						
Phaenospectra						
Polypedilum fallax gp.						
Polypedilum tripodura gp.					1	
Stictochironomus				2	3	
Tanytarsini						
Micropsectra	8983	2876	1675	2	1	
Rheotanytarsus				9	5	6
Tanytarsus						
Oligochaeta						
Enchytraeidae	39	20				
Naididae						
Chaetogaster distrophus						
Nais behningi						
Nais elinguis	39	650				
Nais sp.	k97	887	39	54	242	51

RBOSP PROGRESS REPORT

APPENDIX B-13-2 (Continued)

Sampling Method	STATION 19 REPLICATE A	19 B	19 C	24 DF A	24 DF B	24 DF C
Tubificidae						
Limnodrilus claparedeianus			20	4	11	1
Limnodrilus hoffmeisteri	453	79	138	9	32	2
Limnodrilus spiralis	99					
Limnodrilus udekemianus						
Tubifex sp.						
Immature tubificids w/o capilliform chaetae	2423	1498	1201	64	145	14
Immature tubificids w capilliform chaetae	2009	591	946			
Unidentified						

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION REPLICATE					
	25			26		
	DF			DF		
	A	B	C	A	B	C
Chironomidae						
Tanypodinae						
Conchapelopia	2	3		2	2	2
Pentaneurini						
Psectrotanypus						
Podonominae						
Boreochlus						
Diamesinae						
Diamesa	1	3	2	7	6	6
Monodiamesa						
Odontomesa						
Pseudodiamesa c.f. pertinax						
Pseudodiamesa Sp. 1						
Orthocladiinae						
Chaetocladius						
Corynoneura						
Cricotopus				2		
Cricotopus (Cricotopus)						
Cricotopus (Cricotopus) tremulus gp.						
Diplocladius						
Eukiefferiella	6	11	11	1	10	4
Gymnometriocnemus terrestris gp.						

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION REPLICATE 25 DF A	25 DF B	25 DF C	26 DF A	26 DF B	26 DF C
Holocladius						
Metriocnemus						
Orthocladius	5	10	11	7	6	
Paracladius						
Parakiefferiella	3			1	2	
Parametriocnemus					2	1
Parapnaenocladius		1				
Pseudosmittia						
Thienemanniella						
Chironominae						
Cryptochironomus						1
Microtendipes	9	5	14	6	3	4
Paratendipes						
Phaenospectra				1		
Polypedilum fallax gp.						
Polypedilum tripodura gp.	1	1			2	1
Stictochironomus					1	
Tanytarsini						
Micropsectra					1	
Rheotanytarsus	2	4	1	8	3	4
Tanytarsus						
Oligochaeta						
Enchytraeidae						
Naididae						
Chaetogaster distrophus						
Nais behningi		23			1	
Nais elinguis						
Nais sp.	5		2	6	3	

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 25 REPLICATE A	25 DF B	25 C	26 A	26 DF B	26 C
Tubificidae						
Limnodrilus claparedeianus				10		2
Limnodrilus hoffmeisteri				3		1
Limnodrilus spiralis						
Limnodrilus udekemianus						
Tubifex sp.						
Immature tubificids w/o capilliform chaetae				3	1	2
Immature tubificids w capilliform chaetae						1
Unidentified					1	

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 33 REPLICATE DF A	33 DF B	33 DF C	STATION 34 REPLICATE DF A	34 DF B	34 DF C
Chironomidae						
Tanypodinae						
Conchapelopia		1				
Pentaneurini						
Psectrotanypus						
Podonominae						
Borecchlus						
Diamesinae						
Diamesa	8	6	12	5	7	5
Monodiamesa					1	
Odontomesa						
Pseudodiamesa c.f. pertinax						
Pseudodiamesa Sp. 1						
Orthocladiinae		1	2			1
Chaetocladius						
Corynoneura						
Cricotopus	1					
Cricotopus (Cricotopus)						2
Cricotopus (Cricotopus) tremulus gp.						
Diplocladius						
Eukiefferiella	9	9	7	4	9	5
Gymnometriocnemus terrestris gp.						

2.4.5.124

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION REPLICATE 33 DF A	33 DF B	33 DF C	34 DF A	34 DF B	34 DF C
Holocladius					1	
Metriocnemus						
Orthocladius	5	13	11	15	7	12
Paracladius						
Parakiefferiella	2		1	3	4	2
Parametriccnemus						
Paraphaenocladius					2	1
Pseudosmitta						
Thienemanniella						
Chironominae						
Cryptochironomus						
Microtendipes	2	1	2	4	3	4
Paratendipes						
Phaenospectra				1		
Polypedilum fallax gp.						
Polypedilum tripodura gp.						
Stictochironomus						
Tanytarsini						
Micropsectra	1					
Rheotanytarsus	6	5	3	2	3	6
Tanytarsus						
Oligochaeta						
Enchytraeidae						
Naididae						
Chaetogaster distrophus						
Nais behningi				3	2	
Nais elinguis						
Nais sp.	7	18		16	5	

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 33 REPLICATE DF A	33 B	33 C	STATION 34 REPLICATE DF A	34 B	34 C
Tubificidae						
Limnodrilus claparedeianus						
Limnodrilus hoffmeisteri						
Limnodrilus spiralis						
Limnodrilus udekemianus						
Tubifex sp.						
Immature tubificids w/o capilliform chaetae	3		1			
Immature tubificids w capilliform chaetae						
Unidentified						

2.4.5.126

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 35 REPLICATE A	STATION 35 REPLICATE B	STATION 35 REPLICATE C
	DF	DF	DF
Chironomidae			
Tanypodinae			
Conchapelopia	1	1	
Pentaneurini			
Psectrotarypus			
Podonominae			
Boreochlus			
Diamesinae			
Diamesa	9	3	8
Monodiamesa			
Odontomesa			
Pseudodiamesa c.f. pertinax			
Pseudodiamesa Sp. 1			
Orthocladiinae			
Chaetocladius			
Corynoneura			
Cricotopus			
Cricotopus (Cricotopus)			
Cricotopus (Cricotopus) tremulus gp.			
Diplocladius			
Eukiefferiella	6	10	8
Gymnometriocnemus terrestris gp.			

RBOSP PROGRESS REPORT

APPENDIX B-10-2 (Continued)

Sampling Method	STATION 35 REPLICATE DF A	B	C
Holocladius			
Metriocnemus			
Orthocladius	15	17	17
Paracladius			
Parakiefferiella	1		1
Parametriocnemus			
Parapsaenocladius			1
Pseudosmittia			
Thienemanniella			
Chironominae			
Cryptochironomus			
Microtendipes	1	1	
Paratendipes			
Pnaenospectra			
Polypedilum fallax gp.			
Polypedilum tripodura gp.			
Stictochironomus			
Tarytarsini			
Micropsectra	1		
Rheotanytarsus	3	5	1
Tanytarsus			
Oligochaeta			
Enchytraeidae			
Naididae			
Chaetogaster distrophus			
Nais behningi			
Nais elinguis			
Nais sp.	10		

ABCSP PROGRESS REPORT

APPENDIX B-10-3

DENSITIES OF DRIFT MACROINVERTEBRATES OBSERVED
DURING RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975

APPENDIX B-10-3

DRIFT MACROINVERTEBRATES OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES
DECEMBER 1974 - JANUARY 1975. (Organisms/M3.
Data were obtained from Zooplankton collections.)

	STATION / REPLICATE					
	3		4		5	
	A	B	A	B	A	B
Nematoda			1,400	200	200	
Arthropoda						
Acarina						
Insecta						
Chironomidae	560	200	220	120	30 60	130
Corixidae						
Simuliidae			290	380	10	
Collembola						
Diptera						
Ephemeroptera			60	90		
Plecoptera						
Trichoptera					10	
Oligochaeta	450	350	2,030	2,040		

APPENDIX B-10-3 (Continued)

	STATION / REPLICATE					
	8		9		13	
	A	B	A	B	A	B
Nematoda			200	200	200	
Arthropoda						
Acarina						
Insecta						
Ceratopogonidae	10					10
Chironomidae	80	150	130	160	306	184
Corixidae						
Simuliidae	20	10	10		20	10
Collembola						
Diptera						
Ephemeroptera	40	100	10	10		
Plecoptera				10		
Trichoptera						
Oligochaeta	50	130	180	90	61	51

RBOSP PROGRESS REPORT

APPENDIX B-10-3 (Continued)

	STATION / REPLICATE					
	14		19		20	
	A	B	A	B	A	B
Nematoda	400	400			1,600	1,600
Arthropoda						
Acarina						
Insecta						
Ceratopogonidae					10	
Chironomidae	122	224	10	180	92	92
Corixidae						
Simuliidae	367	265				
Collembola						
Diptera						
Ephemeroptera	204	71			10	
Plecoptera		10				
Trichoptera						
Oligochaeta	71	102			31	10

RBOSP PROGRESS REPORT

APPENDIX B-10-3 (Continued)

	STATION/REPLICATE					
	21		22		23	
	A	B	A	B	A	B
Nematoda	200		400			600
Arthropoda						
Acarina						
Insecta						
Ceratopogonidae		10	10			10
Chironomidae	173	102	143	92	184	418
Corixidae						
Simuliidae						
Collembola						
Diptera						
Ephemeroptera	10	10			92	111
Plecoptera						
Trichoptera					10	
Oligochaeta	10		10	10	82	143

RBOSP PROGRAMS

APPENDIX B-10-3 (Continued)

	STATION, REPLICATE					
	24		25		26	
	A	B	A	B	A	B
Nematoda	200	400	1,600	1,000	10	1,400
Arthropoda						
Acarina						10
Insecta						
Ceratopogonidae						
Chironomidae	275	377	143	133	235	92
Corixidae						
Simuliidae	10	51			10	
Collembola		10				
Diptera						
Ephemeroptera	10	10		31	10	
Plecoptera	20		20		31	
Trichoptera						
Oligochaeta	194	102	184	102	306	24

RBOSP PROGRESS REPORT

APPENDIX B-10-3 (Continued)

	STATION / REPLICATE					
	30		31		32	
	A	B	A	B	A	B
Nemiatoda	3,000		1,000		200	1,000
Arthropoda						
Acarina						
Insecta						
Ceratopogonidae						
Chironomidae					158	231
Corixidae						
Simuliidae			500			11
Collembola						
Diptera						
Ephemeroptera						21
Plecoptera					21	
Trichoptera						
Oligochaeta	1,000		1,000		105	137

RBOSP PROGRESS REPORT

	STATION / REPLICATE					
	33		34		35	
	A	B	A	B	A	B
Nematoda	31		1,200	600	200	1,600
Arthropoda						
Acarina						
Insecta						
Ceratopogonidae	41					
Chironomidae	3,091	3,570	82	20	143	184
Corixidae						10
Simuliidae	51	122		10	10	
Collembola						
Diptera						
Ephemeroptera	316	500	10		10	51
Plecoptera			10			
Trichoptera						
Oligochaeta		10	31	61	20	31

RBOSP PROGRESS REPORT

APPENDIX B-11-1

MACROINVERTEBRATE TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX 6-11-1

MACROINVERTEBRATE TAXA OBSERVED DURING
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975

Nematoda

Mollusca
  Gastropoda
   Basommatophora
    Physidae
      Physa Draparnaud
    Lymnaeidae
      Lymnaea Lamarck

Annelida
  Hirudinea
   Rhynchobdellida
    Glossiphoniidae
      Helobdella stagnalis (Linnaeus)

  Oligochaeta

Arthropoda
  Arachnoidea
    Acari
  Crustacea
    Amphipoda
      Talitridae
        Hyallela azteca (Saussure)

Insecta
  Ephemeroptera
    Heptageniidae
      Epeorus Eaton
      Rhithrogena Eaton
    Baetidae
      Baetis Leach
      Callibaetis Eaton
    Ephemerellidaen
      Ephemerella Walsh
    Tricorythidae
      Tricorythodes Ulmer

  Odonata
   Zygoptera
    Coenagrionidae
      Enallagma Charpentier

Anisoptera
Gomphidae

Plecoptera
Euholognatha
Capniidae
Systellognatha
Perlodidae
Isoperla Banks

Coleoptera
Dytiscidae
Deronectes Sharp
Oreodytes Seidlitz
Elmidae
Dubiraphia Sanderson
Microcylloepus Hinton
Zaitzevia Champion
Dryopidae
Helichus Erichson

Trichoptera
Glossosomatidae
Hydropsychidae
Hydropsyche Pictet
Hydroptilidae
Hydroptila Dalman
Limnephilidae
Hesperophylax Banks
Leptoceridae
Oecetis McLachlan
Brachycentridae
Brachycentrus Curtis

Lepidoptera
Pyralidae

Diptera
Tipulidae
Dicranota Zetterstedt
Holorusia Loew
Limnophila Macquart
Psychodidae
Pericoma Walker
Ceratopogonidae
Chironomidae
Culicidae

RBOSP PROGRESS REPORT

Simuliidae
  Simulium argus Williston
  S. piperi Dyar & Shannon
  S. vittatum Zetterstedt
Stratiomyidae
  Euparyphus Gerstaecker
  Stratiomys Geoffroy
Tabanidae
  Chrysops Meigen
Rhagionidae
  Atherix variegata Walker
Empididae
  Clinocera Meigen
  Hemerodromia Meigen
Anthomyiidae
  Limnophora aequifrons Stein
  L. Discreta Stein

RBOSP PROGRAM SUPPORT

2.4.5 Benthos

2.4.5 Benthos

2.4.5.1 Objectives

The objective of this aspect of the aquatic baseline data accumulation program is to describe the benthic community and its diversity in each sampling area and to visually examine and describe stream substrates in those areas.

2.4.5,2 Methods

The methods reported in section 2.4.5.2 of Progress Report 2 remain unchanged, with the exception that the D-frame net was not utilized during the April sampling. Instead, a modified Surber sampler which is 25 inches high was utilized in deeper areas of the White River. In addition, in several of the very narrow streams on or near Tract C-a, an elliptical modified Surber sampler was used to collect the April benthos samples.

2.4.5.3 Results

Appendix B-10-1 and B-10-2 include the results of the analysis of Chironomidae and Oligochaeta collected during December 1974 - January 1975. A total of 10 taxa of Oligochaeta and 35 taxa of Chironomidae were observed. The total number of taxa (including all taxonomic groups) identified in benthos samples taken during December - January is 108. Further taxonomic study of both the October - November and December - January benthos has resulted in the following revisions in classification of organisms: taxa previously reported as Neotrichia (Trichoptera:Hydroptilidae) will now be reported as Glossosomatidae (Trichoptera); the following revisions have been made to Chironomidae reported for the October - November period: Chaetocladius sp., Parakiefferiella sp. 2, Orthocladiinae sp. 2, and Orthocladiinae sp. 3 and 4 will now be reported as Parametriocnemus - Paraphaenocladius, Paracladius Cardiocladius, and Orthocladiinae sp. 1, respectively. In addition, the following have been added to the list of taxa observed during October - November: Cricotopus (Cricotopus) festivellus group, Cricotopus (Cricotopus) trifascia, Cricotopus (Isocladius) c.f. tricinctus, Parametriocnemus sp., and Paraphaenocladius sp., (all of these taxa belong to the family Chironomidae).

During the analysis of one replicate of the benthos samples collected during April 1975, a total of 45 taxa have been observed. Appendix B-11-1 lists the taxa observed in April samples to date. Appendix B-12-2 presents the quantitative data from laboratory analyses completed to date. At the headwater stations the most abundant taxa included Chironomidae, Nematoda, Oligochaeta, Baetidae, Ceratopogonidae, and Simuliidae. At the tract stations taxa belonging to the Chironomidae, Baetidae, and Oligochaeta were most abundant. In Yellow Creek the most abundant taxa belonged to the Oligochaeta, Ceratopogonidae, Chironomidae, and Simuliidae. In the White Riverthe most abundant taxa belonged to the Chironomidae, Ephemerellidae, Tricorythidae, and Oligochaeta.

APPENDIX B-11-2

DENSITIES OF BENTHOS (MACROINVERTEBRATES) OBSERVED
DURING RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-11-2[2]

DENSITIES OF BENTHOS (MACROINVERTEBRATES) OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES, APRIL 1975.[1] (Results are expressed as organisms/m^2)

Sampling Method[1]	STATION REPLICATE 1 ES	1 A	2 ES	2 A	3 ES	3 A	4 ES	4 A	5 ES	5 A
Nematoda										
Physa							344		3638	
Lymnaea									36	
Helobdella stagnalis										
Oligochaeta	290		163		54		272		18	
Acari									47295	
Hyallela azteca										
Epeorus									977	
Rhithrogena										
Baetidae										
Baetis					109		3873		109	
Callibaetis	54				217		1412		18	
Ephemerella										
Tricorytnodes										
Coenagrionidae										
Enallagma									36	
Gomphidae									18	

[1]Stations 6,10-12, and 15-18 were dry at the time of sampling.

[2]Sampling Method: ES = Elliptical Modified Surber; TS = Tall Modified Surber; ED = Ekman Dredge; S = Modified Surber

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	1 ES / A	2 ES / A	3 ES / A	4 ES / A	5 ES / A
Capniidae				18	
Isoperla					18
Deronectes					
Oreodytes		18			
Elmidae					
Dubiraphia					
Microcylloepus					
Zaitzevia					
Helichus					
Glossosomatidae					
Hydropsyche					18
Hydroptila					959
Limnephilidae					
Hesperophylax	18	109	36		18
Oecetis					
Brachycentrus					
Pyralidae					
Dicrarcta			36		
Holorusia		308	543		18
Limnophila					
Pericoma					18
Ceratopogonidae	36	54	163	18	6281
Chironomidae	3349	3638	2824	3204	18462
Simuliidae			72	3928	11331
Simulium argus					
S. piperi					
S. vittatum					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE									
	1		2		3		4		5	
	ES	A	ES	A	ES	A	ES	A	ES	A
Stratiomyidae										
Euparyphus	54									
Stratiomys					18					
Tabanidae										
Chrysops										
Rhagionidae										
Atherix variegata										
Empididae										
Clinocera										
Heterodromia										272
Anthomyiidae										
Limnophora aequifrons					109		18			
Limnophora discreta										

RBOCP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

Sampling Method	STATION REPLICATE 6 Dry A	7 ES A	8 ES A	9 ES A	10 Dry A
Nematoda				253	
Physa					
Lymnaea					
Helobdella stagnalis					
Oligochaeta		127	308	12218	
Acari					
Hyallela azteca					
Epeorus			72		
Rhithrogena					
Baetidae		54	977	1068	
Baetis		54	326		
Callibaetis					
Ephemerella					
Tricorythodes					
Coenagrionidae					
Enallagma					
Gomphidae					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	6 Dry A	7 ES A	8 ES A	9 ES A	10 Dry A
Capniidae					
Isoperla					
Deronectes					
Oreodytes					
Elmidae					
Dubiraphia					
Microcylloepus					
Zaitzevia					
Helichus					
Glossosomatidae					
Hydropsychidae					
Hydropsyche					
Hydroptila		18			
Limnephilidae					
Hesperophylax					
Oecetis					
Brachycentrus					
Pyralidae					
Dicranota					
Holorusia			18	18	
Limnophila					
Pericoma					
Ceratopogonidae		109	434	163	
Chironomidae		127	5973	10426	
Simuliidae					
Simulium argus					
S. piperi					
S. vittatum					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	6 Dry A	7 ES A	8 ES A	9 ES A	10 Dry A
Stratiomyidae					
Euparyphus					
Stratiomys					
Tabanidae					
Chrysops					
Rhagionidae					
Atherix variegata					
Empididae					
Clinocera					
Hemerodromia			36	54	
Anthomyiidae					
Limnophora aequifrons					
Limnophora discreta			18		

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

Sampling Method	STATION REPLICATE 11 Dry A	12 Dry A	13 ES A	14 ED A	15 Dry A
Nematoda			217	388	
Physa					
Lymnaea					
Helobdella stagnalis					
Oligochaeta			10806	10679	
Acari					
Hyallela azteca					
Epeorus					
Rhithrogena					
Baetidae			887	43	
Baetis			887		
Callibaetis				2368	
Ephemerella					
Tricorythodes					
Coenagrionidae					
Enallagma					
Gomphidae					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	11 Dry A	12 Dry A	13 ES A	14 ED A	15 Dry A
Capniidae					
Isoperla			127		
Deronectes					
Oreodytes					
Elmidae					
Dubiraphia					
Microcylloepus					
Zaitzevia					
Helichus					
Glossosomatidae					
Hydropsychidae					
Hydropsyche					
Hydroptila				43	
Limnephilidae			18		
Hesperophylax					
Oecetis					
Brachycentrus					
Pyralidae					
Dicranota					
Holorusia			18		
Limnophila					
Pericoma					
Ceratopogonidae			163	1335	
Chironomidae			9665	76776	
Simuliidae					
Simulium argus					
S. piperi					
S. vittatum					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	11 Dry A	12 Dry A	13 ES A	14 ED A	15 Dry A
Stratiomyidae					
Euparyphus					
Stratiomys					
Tabanidae					
Chrysops					
Rhagionidae					
Atherix variegata					
Empididae					
Clinocera				129	
Hemerodromia			127		
Anthomyiidae					
Limnophora aequifrons					
Limnophora discreta					

2.4.5.150

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

Sampling Method[1]	STATION REPLICATE 16 Dry A	17 Dry A	18 Dry A	19 ES A	20 Dry A
Nematoda				887	109
Physa					
Lymnaea				36	
Helobdella stagnalis				18	
Oligochaeta				17267	471
Acari				1593	344
Hyallela azteca				109	
Epeorus					
Rhithrogena					
Baetidae					
Baetis					
Callibaetis					
Ephemerella					
Tricorythodes					
Coenagrionidae				145	18
Enallagma					
Gomphidae					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	16 Dry A	17 Dry A	18 Dry A	19 ES A	20 ES A
Capniidae					
Isoperla					
Deronectes				54	
Oreodytes					
Elmidae				18	
Dubiraphia					
Microcylloepus					
Zaitzevia					
Helichus					
Glossosomatidae					
Hydropsychidae					
Hydropsyche					
Hydroptila				235	
Limnephilidae					
Hesperophylax					
Oecetis					
Brachycentrus					
Pyralidae					
Dicranota					
Holorusia					
Limnophila					
Pericoma					
Ceratopogonidae				3168	3095
Chironomidae				38481	8670
Simuliidae				58373	1430
Simulium argus					91
S. piperi				796	
S. vittatum				1466	

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	16 Dry A	17 Dry A	18 Dry A	19 ES A	20 Dry A
Stratiomyidae					
Euparyphus				36	
Stratiomys					
Tabanidae					
Chrysops				109	
Rhagionidae					
Atherix variegata					
Empididae					
Clinocera				36	
Hemerodromia					
Anthomyiidae					
Limnophora aequifrons					
Limnophora discreta					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

Sampling Method	STATION REPLICATE 21 ES A	22 ES A	23 TS A	24 TS A	25 TS A
Nematoda	54	127	117	98	20
Physa					
Lymnaea					
Helobdella stagnalis					
Oligochaeta	18	4398	254	936	117
Acari	163	18	20		
Hyallela azteca					
Epeorus					
Rhithrogena					
Baetidae					20
Baetis		20		39	39
Callibaetis				39	59
Ephemerella					
Tricorythodes	18	488	644		1599
Coenagrionidae		20	39		78
Enallagma					
Gomphidae					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	21 ES A	22 ES A	23 TS A	24 TS A	25 TS A
Capniidae					
Isoperla			39	98	
Deronectes					
Oreodytes					
Elmidae					
Dubiraphia					
Microcylloepus					
Zaitzevia					
Helichus					20
Glossosomatidae			20		39
Hydropsychidae				20	20
Hydropsyche			20		39
Hydroptila			39		
Limnephilidae					
Hesperophylax					
Oecetis					
Brachycentrus					
Pyralidae			20		
Dicranota					
Holorusia					
Limnophila			117	39	
Pericoma					
Ceratopogonidae	543	272	39	117	39
Chironomidae	7439	7475	2087	1989	780
Simuliidae	996	127			
Simulium argus					
S. piperi					
S. vittatum					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	21 ES A	22 ES A	23 TS A	24 TS A	25 TS A
Stratiomyidae					
Euparyphus					
Stratiomys					
Tabanidae					
Chrysops					
Rhagionidae					
Atherix variegata				39	20
Empididae					
Clinocera					
Hemerodromia					
Anthomyiidae					
Limnophora aequifrons				18	
Limnophora discreta					

TBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

Sampling Method[1]	STATION REPLICATE 26 TS A	27 TS A	28 S A	29 TS A	30 TS A
Nematoda	98	20	20	20	20
Physa					
Lymnaea					
Helobdella stagnalis					
Oligochaeta	351	1248	2403	2457	215
Acari	78	39		20	39
Hyallela azteca					
Epeorus					
Rhithrogena			20	39	
Baetidae	59		276	59	20
Baetis	78	20	99	20	39
Callibaetis					
Ephemerella	2457	176	1221	527	1424
Tricorythodes	1736	39	158		527
Coenagrionidae					
Enallagma					
Gomphidae			20		20

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	26 TS A	27 TS A	28 S A	29 TS A	30 TS A
Capniidae					
Isoperla	98	20	59	39	78
Deronectes					
Oreodytes					
Elmidae					
Dubiraphia	20			20	20
Microcylloepus			20		20
Zaitzevia	20				
Helichus					
Glossosomatidae					
Hydropsychidae	527			20	449
Hydropsyche	117			39	98
Hydroptila	20	39	39	20	449
Limnephilidae					
Hesperophylax					
Oecetis					
Brachycentrus					
Pyralidae	39				39
Dicranota					
Holorusia					
Limnophila	20		20		
Pericoma					
Ceratopogonidae			20	20	
Chironomidae	2438	527	2443	995	2418
Simuliidae				20	
Simulium argus					
S. piperi					
S. vittatum					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	26 TS A	27 TS A	28 S A	29 TS A	30 TS A
Stratiomyidae					
Euparyphus					
Stratiomys a					
Tabanidae					
Chrysops					
Rhagionidae					
Atherix variegata				20	
Empididae					
Clinocera					39
Hemerodromia					
Anthomyiidae					
Limnophora aequifrons					
Limnophora discreta					

RBOSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

Sampling Method	STATION REPLICATE 31 TS	31 A	32 TS	32 A	33 TS	33 A	34 TS	34 A	35 TS	35 A
Nematoda	20				59				39	
Physa										
Lymnaea										
Helobdella stagnalis										
Oligochaeta	98		176		156		78		39	
Acari										
Hyallela azteca										
Epeorus										
Rhithrogena	39				98		20		59	
Baetidae	117				59		59		117	
Baetis	39				273		176		59	
Callibaetis										
Ephemerella	1151		1151		1872		1053		351	
Tricorythodes			78				39			
Coenagrionidae										
Enallagma										
Gomphidae			20							

RBOGP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	31 TS A	32 TS A	33 TS A	34 TS A	35 TS A
Capniidae					
Isoperla	20		39	20	39
Deronectes					
Oreodytes					
Elmidae					
Dubiraphia					
Microcylloepus			20		
Zaitzevia					
Helichus					
Glossosomatidae	39		39	20	78
Hydropsychidae	312	98	20		
Hydropsyche	59			20	39
Hydroptila	39				
Limnephilidae					
Hesperophylax					
Oecetis			20		
Brachycentrus					20
Pyralidae	20	20			
Dicranota					
Holorusia					
Limnophila	20		98		
Pericoma					
Ceratopogonidae	20		59		
Chironomidae	936	1872	956	605	195
Simuliidae					
Simulium argus					
S. piperi					
S. vittatum					

REDSP PROGRESS REPORT

APPENDIX B-11-2 (Continued)

	STATION REPLICATE				
	31 TS A	32 TS A	33 TS A	34 TS A	35 TS A
Stratiomyidae					
Euparyphus					
Stratiomys					
Tabanidae					
Chrysops					
Rhagionidae					
Atherix variegata					
Empididae					
Clinocera					
Hemerodromia					
Anthomyiidae					
Limnophora aequifrons					
Limnophora discreta					

2.4.5.16

RECSP PROGRESS REPORT

APPENDIX B-11-3

DENSITIES OF DRIFT MACROINVERTEBRATES OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES

APRIL 1975

APPENDIX B-11-3

DENSITIES OF DRIFT MACROINVERTEBRATES OBSERVED DURING RBOSP AQUATIC BASELINE STUDIES, APRIL 1975[1]
(Data were obtained from zooplankton collections and are expressed as organisms/m^3)

	STATION REPLICATE				
	1 A	2 A	3 A	4 A	5 A
NEMATODA	150	20	40	20	20
OLIGOCHAETA		50	710	420	110
ARTHROPODA					
Insecta					
Coleoptera					
Collembola					
Diptera					
Ceratopogonidae			30		10
Chironomidae	30	150	600	40	440
Simuliidae					
Ephemeroptera		90		50	
Plecoptera				10	
Trichoptera					10

[1]Stations 6,10-12, and 14-18 were dry at the time of sampling

APPENDIX B-11-3 (Continued)

	STATION REPLICATE				
	6 A Dry	7 A	8 A	9 A	10 A Dry
NEMATODA					
OLIGOCHAETA			8	1020	
ARTHROPODA					
Insecta					
Coleoptera					
Collembola					
Diptera					
Ceratopogonidae					
Chironomidae		10	80	250	
Simuliidae				10	
Ephemeroptera			20	110	
Plecoptera			10		
Trichoptera					

2.4.5.165

KBOSP PROGRESS REPORT

APPENDIX B-11-3 (Continued)

	STATION REPLICATE				
	11 A Dry	12 A Dry	13 A	14 A	15 A Dry
NEMATODA			110	40	
OLIGOCHAETA			2430	70	
ARTHROPODA					
Insecta					
Coleoptera					
Collembola				10	
Diptera					
Ceratopogonidae			180	20	
Chironomidae			1110	710	
Simuliidae					
Ephemeroptera				450	
Plecoptera					
Trichoptera					

NBOSP PROGRESS REPORT

APPENDIX B-11-3 (Continued)

	STATION REPLICATE				
	16 A Dry	17 A Dry	18 A Dry	19 A	20 A
NEMATODA				20	10
OLIGOCHAETA				40	70
ARTHROPODA					
Insecta					
Coleoptera					10
Collembola					
Diptera					
Ceratopogonidae				170	20
Chironomidae				970	1040
Simuliidae				30	10
Ephemeroptera					20
Plecoptera					
Trichoptera				20	

2.4.5.16

RESOP PROGRESS REPORT

APPENDIX B-11-3 (Continued)

	STATION REPLICATE				
	21 A	22 A	23 A	24 A	25 A
NEMATODA	50	30			
OLIGOCHAETA	60	20	170	10	8
ARTHROPODA					
Insecta					
Coleoptera					
Collembola	10	30			
Diptera					
Ceratopogonidae	40	10			
Chironomidae	540	320	50	10	100
Simuliidae	10		10	10	
Ephemeroptera		40	20	40	
Plecoptera				10	
Trichoptera		10			

RBOSP PROGRESS REPORT

APPENDIX B-11-3 (Continued)

	STATION REPLICATE				
	26 A	27 A	28 A	29 A	30 A
NEMATODA	10	30	10	20	10
OLIGOCHAETA	100	140	100	60	20
ARTHROPODA					
Insecta					
Coleoptera					
Collembola					
Diptera					
Ceratopogonidae					
Chironomidae	40	60	80	50	10
Simuliidae		10		10	
Ephemeroptera	10	20	10	20	
Plecoptera					
Trichoptera					

RBOSP PROGRESS REPORT

APPENDIX B-11-3 (Continued)

	STATION REPLICATE				
	31 A	32 A	33 A	34 A	35 A
NEMATODA	30	30	10		
OLIGOCHAETA	110	150	40	40	70
ARTHROPODA					
Insecta					
Coleoptera					
Collembola					
Diptera					
Ceratopogonidae					
Chironomidae	40	70	40	10	
Simuliidae					20
Ephemeroptera		10			10
Plecoptera					
Trichoptera					

RBOSP PROGRESS REPORT

2. 4. 6 Sediment Chemistry

2.4.6 Sediment Chemistry

2.4.6.1 Objectives

The objectives of sediment chemistry studies remain the same as those stated in section 2.4.6.1 of Progress Report-2.

2.4.6.2 Methods

As indicated in Table 2.4-3, refrigeration is used to preserve sediment samples. Since Progress Report-2, the analytical methods utilized for total Kjeldahl nitrogen and total phosphate have been changed to Kjeldahl digestion and electrode and persulfate digestion, respectively; and sediment detection limits have been updated.

2.4.6.3 Results

Appendix B-12-1 includes the results of chemical analysis of sediment samples taken during the April 1975 sampling period. Appendix B-13-1 includes the results of analysis for selected herbicides in the same sediment samples.

APPENDIX B-12-1

RESULTS OF SEDIMENT CHEMISTRY ANALYSIS
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-12-1

RESULTS OF SEDIMENT CHEMISTRY ANALYSIS DURING RBOSP AQUATIC BASELINE STUDIES
APRIL 1975 (Results are expressed in µg/g unless otherwise noted)

STATION[1] REPLICATE	PARAMETER							
	Al	As[2]	Pb	Hg (ng/g)	KJELDAHL N	TOTAL P	VOLATILE SOLIDS	Zn
1-A	7,500		38	<54	4,890	878	128,000	299
1-B	8,600		43	209	4,630	865	125,000	225
2-A	17,000		14	<60	2,450	951	92,300	66
2-B	15,700		14	<51	2,684	1,015	93,800	66
3-A	12,400		9	<58	565	718	40,600	52
3-B	13,800		9	<59	595	730	40,700	47
4-A	11,800		9	88	863	813	43,500	51
4-B	9,000		9	<45	823	814	43,600	50
5-A	23,100		8	<55	620	600	40,000	57
5-B	27,000		8	<47	592	596	39,600	57
7-A	11,700		8	<51	618	620	41,100	48
7-B	18,000		8	<43	687	645	43,800	47
8-A	23,000		9	<43	870	741	48,400	67
8-B	24,900		9	<50	1,000	686	49,300	59
9-A	14,900		25	<53	1,643	673	62,200	56
9-B	17,100		28	<56	1,657	674	62,700	57
13-A	21,400		7	<48	651	660	41,600	55
13-B	20,000		7	<50	636	723	43,100	58

1 Stations 6, 10-12 and 15-18 were dry at the time of sampling.
2 Arsenic analysis incomplete at time of report preparation

APPENDIX B-12-1 (Continued)

STATION REPLICATE	Al	As	Pb	Hg (ng/g)	KJELDAHL N	TOTAL P	VOLATILE SOLIDS	Zn
14-A	20,100		7	52	765	577	37,900	51
14-B	22,700		8	<50	738	600	37,600	49
19-A	24,900		9	59	2,203	769	77,700	59
19-B	23,200		9	<49	2,373	779	78,300	55
20-A	6,200		5	45	168	466	16,000	30
20-B	6,000		7	<57	197	458	16,900	35
21-A	3,600		5	<44	181	518	9,600	29
21-B	4,800		6	<61	172	506	12,500	21
22-A	4,900		5	<41	255	461	15,300	25
22-B	5,100		6	<54	217	472	15,200	26
23-A	10,400		8	<55	869	637	38,100	41
23-B	8,800		7	<60	810	638	38,500	39
24-A	6,600		5	<42	325	378	19,600	28
24-B	6,600		5	<52	327	393	21,800	31
25-A	3,100		4	<51	114	701	10,700	20
25-B	3,100		4	<59	100	663	11,200	21
26-A	3,000		4	<47	138	701	9,400	21
26-B	3,400		2	<64	149	645	7,500	22

RBOSP PROGRESS REPORT

APPENDIX B-12-1 (Continued)

STATION REPLICATE	Al	As	Pb	Hg (ng/g)	KJELDAHL N	TOTAL P	VOLATILE SOLIDS	Zn
27-A	7,700		7	<55	1,143	586	51,500	47
27-B	6,400		6	<59	980	548	32,000	43
28-A	5,600		4	<44	244	488	17,600	31
28-B	5,500		4	<52	211	508	17,200	31
29-A	13,500		9	<48	1,654	707	68,500	64
29-B	12,800		10	<50	1,752	717	68,900	57
30-A	2,800		3	<44	123	794	17,200	49
30-B	4,000		3	<68	317	430	23,100	25
31-A	3,300		4	<47	138	838	17,300	40
31-B	3,600		3	<48	329	390	23,200	33
32-A	3,700		4	<48	202	424	20,200	34
32-B	4,500		4	<54	231	409	20,500	32
33-A	5,500		5	105	764	556	35,100	36
33-B	4,000		4	<53	453	457	23,300	30
34-A	11,000		10	<52	1,864	705	61,800	69
34-B	8,500		8	<42	1,804	660	58,800	58
35-A	8,400		5	<46	612	447	32,700	32
35-B	9,400		5	<50	627	471	31,200	32

RBOSP PROGRESS REPORT

APPENDIX B-13-1

RESULTS OF SEDIMENT HERBICIDE ANALYSIS
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-13-1

RESULTS OF SEDIMENT HERBICIDE ANALYSIS, RBOSP AQUATIC BASELINE STUDIES, APRIL 1975. (Data are µg/g.)

Station	Parameter	
	Tordon 22K	Silvex
1-A[1]		
1-B	<0.05	<0.05
2-A	<0.05	<0.05
2-B	<0.05	<0.05
3-A	<0.05	<0.05
3-B	<0.05	<0.05
4-A	<0.05	<0.05
4-B	<0.05	<0.05
5-A	<0.05	<0.05
5-B	2.0	<0.05
7-A	2.0	<0.05
7-B	1.3	<0.05
8-A	<0.05	<0.05
8-B	<0.05	<0.5
9-A	0.40	<0.05
9-B	0.10	<0.05
13-A	<0.05	<0.05
13-B	0.70	<0.05
14-A	0.10	<0.05
14-B	0.20	<0.05
19-A	<0.05	<0.05
19-B	<0.05	<0.05
20-A	<0.05	<0.05
20-B	0.10	<0.05
21-A	<0.05	<0.05
21-B	<0.05	<0.05
22-A	<0.05	<0.05
22-B	<0.05	<0.05
23-A	<0.05	<0.05
23-B	<0.05	<0.05
24-A	<0.05	<0.05
24-B	<0.05	<0.05
25-B	<0.05	<0.05
26-B	<0.05	<0.05
27-A	<0.05	<0.05
27-B	<0.05	<0.05
28-A	<0.05	<0.05
28-B	<0.05	<0.05
29-A	<0.05	<0.05
29-B	<0.05	<0.05

[1]Sample bottle broken

APPENDIX B-13-1 (Continued)

Station	Parameter	
	Tordon 22K	Silvex
30-B	<0.05	<0.05
32-A	<0.05	<0.05
33-A	3.30	<0.05
33-B	2.70	<0.05
34-A	1.50	<0.05
34-B	1.70	<0.05

RBOSP PROGRESS REPORT

2.4.7 Macrophytes

2.4.7.1 Objectives

The objectives of this aspect of the aquatic studies are to identify and enumerate the aquatic macrophyte species at each sampling station, to determine their relative abundance, and to estimate the percentage of substrate area covered by major beds of macrophytes.

2.4.7.2 Methods

No change in methods has occurred since Progress Report 2. See section 2.4.7.2 for specific methods used in aquatic macrophyte studies.

2.4.7.3 Results

Aquatic macrophytes were observed at a single sampling location during the April 1975 sampling period. At Station 2, water cress (Rorippa nasturtium - aquaticum) was found in scattered abundance. This rating of relative abundance conforms to the system of Jessen and Lound (1962). At the macrophyte sampling transect at Station 2, water cress covered an area of 162.6 cm^2. Within 15.2m(50 ft) of the sampling transect, water cress was found to cover areas of 284 cm^2 and 853 cm^2.

2.4.8 Fish

2.4.8 Fish

2.4.8.1 Objectives

The objectives of fish studies remain the same as those stated in section 2.4.8 of Progress Report 2.

2.4.8.2 Methods

No change in methods has occurred since Progress Report 2. See section 2.4.8.2 of Progress Report 2 for specific methods employed in fish studies.

2.4.8.3 Results

The mean condition factors presented in Appendix A-14-2 of Progress Report-2 should be revised as follows: Mottled sculpin - 1.4; Flannelmouth sucker - 0.86; and Mountain whitefish - 0.92. Fish data from the April sampling period are presented in Appendices B-14-1 through B-14-11. During April, approximately 148 fish, representing 10 species and one hybrid were captured in the White River and lower Yellow Creek. The major portion of the catch during April was composed of flannelmouth and bluehead sucker, mottled sculpin, longnose dace, and fathead minnow. The catch was dominated by rough and forabe fishes; few game fish were observed, although a small number of rainbow trout, brown trout, and mountain whitefish were found in the White River. High turbidity and discharge interfered with fishing efforts during April, as suggested by the relatively few specimens of mottled sculpin captured.

APPENDIX B-14-1

LIST OF FISH SPECIES AND NUMBERS CAPTURED
WHITE RIVER AND LOWER YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975

APPENDIX B-14-1

LIST OF FISH SPECIES AND NUMBERS CAPTURED
WHITE RIVER AND LOWER YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975

Common Name	Scientific Name	Number Captured
Rainbow trout	Salmo gairdneri	4
Brown trout	Salmo trutta	1
Mountain whitefish	Prosopium williamsoni	2
Fathead minnow	Pimephales promelas	10
Longnose dace	Rhinichthys cataractae	12
Speckled dace	Rhinichthys osculus	9
Bluehead sucker	Catostomus discobolus	14
Flannelmouth sucker	Catostomus latipinnis	66
Mottled sculpin	Cottus bairdi	28
Roundtail chub	Gila robusta	1
Bluehead sucker-Flannelmouth sucker hybrid	Catostomus discobolus X Catostomus latipinnis	1

APPENDIX B-14-2

MEAN CONDITION FACTORS FOR THREE SPECIES OF FISH
WHITE RIVER RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-14-2

MEAN CONDITION FACTORS FOR THREE SPECIES OF FISH
WHITE RIVER RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

Species	Number of Specimens	Length Range (mm)	Mean K_{TL}
Mottled sculpin	28	54 - 102	1.64
Flannelmouth sucker	65	45 - 480	0.86
Mountain whitefish	2	255 - 296	0.88

APPENDIX B-14-3

RESULTS OF SCALE ANALYSIS FOR FLANNELMOUTH SUCKERS
WHITE RIVER RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-14-3

RESULTS OF SCALE ANALYSIS FOR FLANNELMOUTH SUCKERS
WHITE RIVER RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

Length (mm)	Weight (gm)	Age Class
326	285	3
458	827	5
313	238	3
320	268	3
283	172	2
244	115	3
237	103	3
250	114	2
210	70	2
215	83	2
346	343	3
400	558	4
318	228	3
383	487	4
382	468	4
345	336	5
445	901	5
403	519	5
320	256	4
455	992	5
326	289	4
289	192	4
208	55	2
221	82	2
431	768	5
340	353	4
480	1050	5
346	395	4
293	234	3
356	339	3
273	193	4
265	152	3
263	147	3
197	66	2
197	66	3
209	69	3
442	820	6
347	356	3
454	898	5
318	255	3
270	165	3

APPENDIX B-14-3 (Continued)

Length (mm)	Weight (gm)	Age Class
406	622	4
408	642	4
346	373	3
299	190	3
362	434	3
353	398	3
263	146	2
368	454	4
223	93	3
243	115	3
145	25	2

RBOSP PROGRESS REPORT

APPENDIX B-14-4

RESULTS OF SCALE ANALYSIS FOR BLUEHEAD SUCKERS
WHITE RIVER RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

1.B.12

APPENDIX B-14-4

RESULTS OF SCALE ANALYSIS FOR BLUEHEAD SUCKERS
WHITE RIVER RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

Length (mm)	Weight (gm)	Age Class
374	576	4
260	154	3
256	143	3
184	148	2
230	111	3
237	138	3
308	311	4
284	218	Regenerate
200	66	2
193	68	3

APPENDIX B-14-5

RESULTS OF SCALE ANALYSIS FOR TROUT AND WHITEFISH
WHITE RIVER RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-14-5

RESULTS OF SCALE ANALYSIS FOR TROUT AND WHITEFISH
WHITE RIVER RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

Rainbow trout

Length (mm)	Weight (gm)	Age Class
437	788	Regenerate
214	107	3
432	585	Regenerate
242	115	3

Brown trout

Length (mm)	Weight (gm)	Age Class
142	24	3

Mountain whitefish

Length (mm)	Weight (gm)	Age Class
290	216	4
255	154	3

APPENDIX B-14-6

SUMMARY OF STOMACH CONTENT ANALYSES FOR TWENTY-EIGHT MOTTLED SCULPIN
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-14-6

SUMMARY OF STOMACH CONTENT ANALYSES FOR TWENTY-EIGHT MOTTLED SCULPIN
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

Food Type	% Frequency of Occurrence[1]	% of Total Food Item[2]
Baetidae	4	2
Baetis	57	43
Rhithrogena	4	< 1
Ephemeroptera	4	2
Ephemerella	43	9
Heptageniidae	4	< 1
Plecoptera	11	2
Isoperla	46	21
Isogenus	4	1
Perlodidae	7	6
Coleoptera	4	2
Hydropsychidae	7	1
Hydropsyche	7	1
Chironomidae	21	9
Megadrile	4	< 1
Insect Remains	86	-

[1] % Frequency of Occurrence = $\frac{\text{\# stomachs containing food item}}{\text{total \# stomachs examined}}$

[2] % of Total Food Items = $\frac{\text{total \# of food taxa in all stomachs}}{\text{total \# of all food items}}$

APPENDIX B-14-7

SUMMARY OF STOMACH CONTENT ANALYSES FOR SIXTY FLANNELMOUTH SUCKERS
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-14-7

SUMMARY OF STOMACH CONTENT ANALYSES FOR SIXTY FLANNELMOUTH SUCKERS
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Nematoda	12	< 1
Acari	20	< 1
Gammaridae	2	< 1
Baetidae	92	7
Baetis	23	< 1
Rhithrogena	20	< 1
Ephemerella	92	21
Tricorythodes	22	< 1
Coenagrionidae	2	< 1
Gomphidae	2	< 1
Plecoptera	5	< 1
Isoperla	70	3
Coleoptera	2	< 1
Hydropsychidae larvae	73	3
Hydropsyche larvae	40	< 1
Cheumatopsyche larvae	2	< 1
Oecetis	5	< 1
Hydroptila larvae	40	1
Limnephilidae	3	< 1
Tipulidae	3	< 1
Chironomidae larvae	98	57
Chironomidae pupae	92	6
Chironomidae adults	10	< 1
Simulidae larvae	17	< 1
Simulidae pupae	8	< 1
Ceratopogonidae	40	1
Pyralidae	23	< 1
Formicidae	5	< 1
Insect Remains	3	-
Plant Seeds	2	-
Fish Scales	2	< 1

[1] % Frequency of Occurrence = $\frac{\text{\# stomachs containing food item}}{\text{total \# stomachs examined}}$

[2] % of Total Food Items = $\frac{\text{total \# of food taxa in all stomachs}}{\text{total \# of all food items}}$

APPENDIX B-14-8

SUMMARY OF STOMACH CONTENT ANALYSES FOR FOUR RAINBOW TROUT
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX

SUMMARY OF STOMACH CONTENT ANALYSES FOR FOUR RAINBOW TROUT
RBOSP AQUATIC BASELINE STUDIES

Food Item	% Frequency of Occurrence[1]	% of Total Food Item[2]
Baetidae	100	5
Ephemerella	50	6
Çoeagrionidae	100	36
Äeshnidae	25	1
Isoperla	75	4
Dytiscidae	50	1
Hydropsychidae	25	1
Chironomidae	50	6
Simulidae	75	11
Tabanidae	50	4
Limnophora	100	18
Corixidae	75	6
Formicidae	25	1

[1] % Frequency of Occurrence = $\frac{\text{\# stomachs containing food item}}{\text{total \# stomachs examined}}$

[2] % of Total Food Items = $\frac{\text{total \# of a food taxa in all stomachs}}{\text{total \# of all food items}}$

APPENDIX B-14-9

SUMMARY OF STOMACH CONTENT ANALYSES FOR TWO MOUNTAIN WHITEFISH
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-14-9

SUMMARY OF STOMACH CONTENT ANALYSES FOR TWO MOUNTAIN WHITEFISH
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

Food Item	% Frequency of Occurrence [1]	% of Total Food Item [2]
Acari	100	< 1
Baetidae	100	< 1
Ephemerella	100	< 1
Isoperla	100	< 1
Hydropsychidae	100	99
Hydroptila	50	< 1
Chironomidae	100	1
Ceratopogonidae	50	< 1
Pyralidae	50	< 1

[1] % Frequency of Occurrence = $\frac{\text{\# stomachs containing food item}}{\text{total \# stomachs examined}}$

[2] % of Total Food Items = $\frac{\text{total \# of food taxa. in all stomachs}}{\text{total \# of all food items}}$

APPENDIX B-14-10

FISH DATA WHITE RIVER AND LOWER YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-14-10

FISH DATA WHITE RIVER AND LOWER YELLOW CREEK
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975

Date	Station-Replicate	Species	Length (mm)	Weight (gm)	K_{Tl}
4-30-75	21-1	No Fish Observed			
4-30-75	21-2	Speckled dace	47	1.1	1.06
		Fathead minnow	32	0.4	1.22
4-30-75	22-1	No Fish Observed			
4-30-75	22-2	Fathead minnow	43	0.9	1.13
4-26-75	23-1	Flannelmouth sucker	454	898	0.96
		"	442	820	0.95
		"	408	642	0.95
		"	406	622	0.93
		"	368	454	0.91
		"	362	434	0.91
		"	353	398	0.90
		"	347	356	0.85
		"	346	373	0.90
		"	318	255	0.79
		"	299	190	0.71
		"	270	165	0.84
		"	263	146	0.80
		"	223	93	0.84
		Bluehead sucker	308	311	1.06
		"	284	218	0.95
		"	200	66	0.83
		"	193	68	0.95
		Longnose dace	90	7	0.96
4-26-75	23-2	Flannelmouth sucker	243	115	0.81
		"	145	25	0.82
4-25-75	24-1	Flannelmouth sucker	445	992	1.05
		"	326	289	0.83
		"	289	192	0.80
		"	208	55	0.61
		Bluehead sucker	282	190	0.85
		"	260	154	0.88
		"	256	143	0.85
		"	230	111	0.91
		"	184	48	0.77

APPENDIX B-14-10 (Continued)

Date	Station Replicate	Species	Length (mm)	Weight (gm)	K_{TL}
4-25-75	24-2	Flannelmouth sucker	221	82	0.76
4-25-75	25-1	Flannelmouth sucker	407	586	0.87
		"	320	256	0.78
		Mountain whitefish	296	216	0.83
4-25-75	25-2	Mountain whitefish	255	154	0.93
4-24-75	26-1	Flannelmouth sucker	445	901	1.02
		"	403	519	0.79
		"	345	336	0.82
		Bluehead sucker	267	168	0.88
		Flannelmouth-Bluehead hybrid	334	285	0.76
4-24-75	26-2	No Fish Observed			
4-22-75	27-1	Flannelmouth sucker	458	827	0.86
		"	438	752	0.89
		"	326	285	0.82
		"	320	268	0.82
		"	313	238	0.78
		"	283	172	0.76
		"	244	115	0.79
		"	237	103	0.77
		"	98	9.7	1.03
		"	46	0.8	0.82
		"	45	0.7	0.77
		Bluehead sucker	49	1.0	0.85
		Mottled sculpin	67	5.2	1.73
		Speckled dace	46	0.9	0.92
		"	45	0.8	0.88
		"	38	0.5	0.91
		Fathead minnow	31	0.2	0.67
4-22-75	27-2	Flannelmouth sucker	257	130	0.77
		"	250	114	0.73
		"	103	10.2	0.93
		Speckled dace	47	1.0	0.96
		"	46	1.0	1.03
		"	35	0.4	0.93
		Roundtail chub	285	192	0.83
4-22-75	28-1	Flannelmouth sucker	413	-	-
		"	351	345	0.80
		"	350	384	0.90

APPENDIX B-14-10 (Continued)

Date	Station Replicate	Species	Length (mm)	Weight (gm)	K_{TL}
4-22-75	28-1	Rainbow trout	437	788	0.94
		"	214	107	1.09
4-22-75	28-2	Rainbow trout	432	585	0.73
		"	242	115	0.81
		Brown trout	142	24	0.84
		Speckled dace	38	0.6	1.09
		Fathead minnow	45	1.0	1.09
4-21-75	29-1	Flannelmouth sucker	474	945	0.89
		"	444	777	0.89
		"	439	792	0.94
		Bluehead sucker	292	223	0.89
		Mottled sculpin	102	18.1	1.71
		"	92	13.0	1.67
		"	83	9.9	1.73
		"	73	5.6	1.44
		"	72	5.6	1.50
		"	70	5.9	1.72
		"	70	5.6	1.63
		"	69	4.9	1.49
		"	67	4.1	1.36
		"	66	4.9	1.70
		"	63	4.0	1.60
		"	62	4.5	1.89
		"	62	3.4	1.43
		"	60	4.1	1.90
		"	58	3.2	1.64
		"	54	2.8	1.78
		Longnose dace	104	10.9	1.69
		"	97	9.9	1.08
		"	93	9.0	1.12
		"	92	8.3	1.07
		"	90	7.2	0.99
		"	88	7.0	1.03
		"	86	6.5	1.02
		"	86	6.3	0.99
		"	79	4.9	0.99
		"	70	3.2	0.93
4-21-75	29-2	Mottled sculpin	98	14.2	1.51
		"	88	13.6	2.00
		"	71	6.9	1.93
		"	66	4.9	1.70

RBOSP PROGRESS REPORT

APPENDIX B-14-10(Continued)

Date	Station Replicate	Species	Length (mm)	Weight (gm)	K_{TL}
4-21-75	29-2	Mottled sculpin	65	4.1	1.49
		"	60	3.1	1.44
		"	57	2.9	1.57
		"	56	2.5	1.42
4-23-75	30-1	No Fish Observed			
4-23-75	30-2	Flannelmouth sucker	383	487	0.87
		"	382	468	0.84
4-23-75	31-1	Flannelmouth sucker	400	558	0.87
		"	318	228	0.71
4-23-75	31-2	No Fish Observed			
4-23-75	32-1	Flannelmouth sucker	346	343	0.83
		"	215	83	0.84
		"	210	70	0.76
		Bluehead sucker	374	576	1.10
		Mottled sculpin	100	17.8	1.78
		"	70	5.3	1.55
		Longnose dace	95	9.4	1.10
		Speckled dace	47	1.0	0.96
4-23-75	32-2	Flannelmouth sucker	416	660	0.92
4-25-75	33-1	Flannelmouth sucker	480	1050	0.95
		"	356	339	0.75
		"	346	395	0.95
		"	340	353	0.90
		"	293	234	0.93
		"	273	193	0.95
		"	265	152	0.82
		"	263	147	0.81
		"	209	69	0.76
		"	197	66	0.86
		"	197	66	0.86
4-25-75	33-2	No Fish Observed			
4-25-75	34-1	Flannelmouth sucker	431	768	0.96
4-25-75	34-2	No Fish Observed			

RBOSP PROGRESS REPORT

APPENDIX B-14-10(Continued)

Date	Station Replicate	Species	Length (mm)	Weight (gm)	K_{TL}
4-25-75	35-2	Longnose dace	76	8	1.82
4-25-75	35-2	Bluenose sucker	237	138	1.04

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APPENDIX B-14-11

RESULTS OF FOOD HABIT ANALYSIS FOR INDIVIDUAL FISH
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-14-11

RESULTS OF FOOD HABIT ANALYSIS FOR INDIVIDUAL FISH
RBOSP AQUATIC BASELINE STUDIES, APRIL 1975

Station 23, Replicate 1, 4-26-75

Species	Length (mm)	Weight (mm)	%Fullness[1]	Food Items #	Food Items Type
Flannelmouth sucker	442	820	50	64	Chironomidae
				8	Chironomidae pupae
				1	Simuliidae
				6	Isoperla sp.
				19	Baetidae
				1	Hydroptila
				1	Rhithrogena
				39	Ephemerella
				1	Plecoptera
				1	Baetis
Flannelmouth sucker	347	356	50	155	Chironomidae
				23	Chironomidae pupae
				6	Ceratopogonidae
				34	Baetidae
				8	Hydropsychidae
				11	Hydroptila
				4	Rhithrogena
				11	Tricorythodes
				73	Ephemerella
				2	Isoperla
				2	Baetis
Flannelmouth sucker	454	898	75	48	Chironomidae
				8	Chironomidae pupae
				16	Isoperla
				28	Baetidae
				36	Hydropsychidae
				12	Hydroptila
				4	Baetis
				4	Limnephilidae
				4	Tipulidae
				236	Ephemerella

[1] % fullness is the percent of apparently available space in the stomach (when empty) taken up by the contents.

APPENDIX B-14-11(Continued)

Station 23, Replicate 1, 4-26-75 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	#	Food Items Type
Flannelmouth sucker	318	255	10	37	Chironomidae
				2	Chironomidae pupae
				4	Ephemerella nymph
				1	Hydroptila nymph
Flannelmouth sucker	270	165	<10	16	Chironomidae
				2	Chironomidae pupae
				1	Baetidae
				1	Hydropsychidae
				1	fish scale
				2	Acari
Flannelmouth sucker	406	622	50	340	Chironomidae
				28	Chironomidae pupae
				12	Isoperla
				12	Baetidae
				8	Hydropsychidae
				4	Hydropsyche
				4	Hydroptila
				4	Baetis
				4	Oecetis
				4	Trycorythodes
				192	Ephemerella
				4	Acari
				4	Pyralidae
Flannelmouth sucker	408	642	50	138	Chironomidae
				4	Chironomidae pupae
				2	Isoperla
				14	Baetidae
				3	Baetis
				1	Tricorythodes
				31	Ephemerella
				2	Simuliidae pupae
Flannelmouth sucker	368	454	25	89	Chironomidae
				10	Chironomidae pupae
				1	Simuliidae
				2	Isoperla
				6	Baetidae
				3	Hydropsychidae
				1	Pyralidae
				6	Hydroptila
				20	Ephemerella
				1	Simuliidae pupae

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	Food Items #	Food Items Type
Station 23, Replicate 1, 4-26-75 (Continued)					
Flannelmouth sucker	223	93	50	50	Chironomidae
				5	Chironomidae pupae
				1	Ceratopogonidae
				2	Isoperla
				7	Baetidae
				7	Hydropsychidae
				4	Hydropsyche
				3	Hydroptila
				1	Tricorythodes
				6	Ephemerella
Flannelmouth sucker	243	115	50	167	Chironomidae
				17	Chironomidae pupae
				15	Baetidae
				8	Hydropsychidae
				1	Pyralidae
				3	Hydroptila
				1	Tricorythodes
				14	Ephemerella
Flannelmouth sucker	145	25	<10	21	Chironomidae
				2	Chironomidae pupae
				1	Ephemerella
Station 24, Replicate 1, 4-25-75					
Flannelmouth sucker	455	992	75	40	Chironomidae
				11	Isoperla
				68	Baetidae
				60	Ephemerella
				4	Acari
Flannelmouth sucker	326	289	50	55	Chironomidae
				4	Chironomidae larvae
				9	Isoperla
				3	Baetidae
				1	Hydropsychidae
				1	Hydroptila
				14	Ephemerella
Flannelmouth sucker	289	192	<10	18	Chironomidae
				3	Chironomidae pupae
				3	Baetidae
				7	Ephemerella

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APPENDIX B-14-11 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	#	Food Items Type
Station 24, Replicate 1, 4-25-75 (Continued)					
Flannelmouth sucker	208	55	50	188	Chironomidae
				9	Chironomidae pupae
				4	Ceratopogonidae
				4	Baetidae
				1	Hydropsychidae
				2	Hydroptila
				2	Ephemerella
Station 24, Replicate 2, 4-25-75					
Flannelmouth sucker	221	82	50	115	Chironomidae
				15	Chironomidae pupae
				1	Ceratopogonidae
				7	Baetidae
Station 25, Replicate 1, 4-25-75					
Flannelmouth sucker	407	586	75	96	Chironomidae
				4	Chironomidae pupae
				12	Ceratopogonidae
				4	Simulidae
				4	Isoperla
				32	Baetidae
				72	Hydropsychidae
				4	Hydropsyche
				80	Ephemerella
Flannelmouth sucker	320	256	25	98	Chironomidae
				15	Chironomidae pupae
				1	Isoperla
				3	Baetidae
				1	Nematoda
				3	Hydroptila
				24	Ephemerella
Mountain whitefish	290	216	50	121	Chironomidae
				6	Chironomidae pupae
				1	Acari
				1	Ceratopogonidae
				4	Isoperla
				9	Baetidae
				142	Hydropsychidae
				37	Hydropsyche
				28	Ephemerella

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Species	Length (mm)	Weight (gm)	Fullness	#	Food Items Type
Station 25, Replicate 2, 4-25-75					
Mountain whitefish	255	154	100	161	Chironomidae
				5	Chironomidae pupae
				1	Acari
				1	Isoperla
				7	Baetidae
				154	Hydropsychidae
				96	Hydropsyche
				1	Pyralidae
				1	Hydroptila
				2	Baetis
				6	Ephemerella
Station 26, Replicate 1, 4-25-75					
Flannelmouth sucker	345	336	25	191	Chironomidae
				15	Chironomidae pupae
				1	Isoperla
				7	Baetidae
				4	Hydropsychidae
				1	Hydroptila
				20	Ephemerella
Flannelmouth sucker	445	901	75	332	Chironomidae
				40	Chironomidae pupae
				4	Ceratopogonidae
				64	Isoperla
				12	Baetidae
				4	Hydropsychidae
				4	Baetis
				8	Rhithrogena
				4	Tricorythodes
				148	Ephemerella
Flannelmouth sucker	403	519	10	17	Chironomidae
				6	Chironomidae pupae
				4	Ceratopogonidae
				6	Isoperla
				10	Baetidae
				21	Ephemerella
				1	Coleoptera larva

RBOSP PROGRESS REPORT

Species	Length (mm)	Weight (gm)	%Fullness	Food Items #	Type
Station 26, Replicate 2, 4-25-75					
No Fish Observed					
Station 27, Replicate 1, 4-22-75					
Flannelmouth sucker	326	285	10	70	Chironomidae
				19	Chironomidae pupae
				1	Simuliidae
				1	Isoperla
				23	Baetidae
				1	Hydropsychidae
				1	Hydropsyche
				1	Nematoda
				20	Ephemerella
Station 27, Replicate 1, 4-22-75					
Flannelmouth sucker	458	827	50	868	Chironomidae
				124	Chironomidae pupae
				12	Ceratopogonidae
				24	Isoperla
				44	Baetidae
				12	Hydropsychidae
				4	Nematoda
				4	Cheumatopsyche
				4	Baetis
				4	Tricorythodes
				152	Ephemerella
Flannelmouth sucker	438	752	<10	47	Chironomidae
				5	Chironomidae pupae
				6	Isoperla
				28	Baetidae
				3	Hydropsychidae
				1	Pyralidae
				60	Ephemerella
				1	Simuliium pupa
Flannelmouth sucker	313	238	<10	49	Chironomidae
				5	Chironomidae pupae
				3	Isoperla
				10	Baetidae
				1	Hydropsychidae
				10	Ephemerella

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Station 27, Replicate 1, 4-22-75 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	#	Food Items Type
Flannelmouth sucker	320	268	30	95	Chironomidae
				18	Chironomidae pupae
				1	Ceratopogonidae
				3	Isoperla
				5	Baetidae
				6	Hydropsychidae
				1	Hydropsyche
				25	Ephemerella
				1	Simuliidae pupae
				1	Chironomidae adult
				1	Acari
Mottled Sculpin	67	5.2	100	3	Chironomidae
				1	Plecoptera
				1	Hydropsychidae
				4	Baetis
				4	Ephemerella
					Insect parts
Flannelmouth sucker	283	172	10	42	Chironomidae
				13	Chironomidae pupae
				2	Isoperla
				8	Baetidae
				2	Pyralidae
				1	Hydroptila
				2	Baetis
				24	Ephemerella
Flannelmouth sucker	244	115	50	74	Chironomidae
				7	Chironomidae pupae
				9	Baetidae
				2	Hydropsychidae
				1	Hydropsyche
				23	Ephemerella
Flannelmouth sucker	237	103	10	81	Chironomidae
				13	Chironomidae pupae
				1	Simuliidae
				1	Isoperla
				10	Baetidae
				2	Hydropsychidae
				12	Ephemerella
				1	Acari
				1	Formicidae

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Station 27, Replicate 2, 4-22-75

Species	Length (mm)	Weight (gm)	%Fullness	#	Food Items Type
Flannelmouth sucker	257	130	10	72	Chironomidae
				16	Chironomidae pupae
				2	Simuliidae
				14	Baetidae
				2	Hydropsychidae
				1	Hydropsyche
				6	Ephemerella
Flannelmouth sucker	250	114	10	41	Chironomidae
				6	Chironomidae pupae
				2	Baetidae
				3	Hydropsychidae
				2	Hydroptila
				15	Ephemerella
				1	Acari

Station 28, Replicate 1, 4-22-75

Flannelmouth sucker	413	644	50	8	Chironomidae
				2	Chironomidae pupae
				6	Ceratopogonidae
				3	Simulidae
				45	Isoperla
				55	Baetidae
				2	Hydropsychidae
				1	Hydropsyche
				26	Ephemerella
Rainbow trout	437	788	<10	1	Coenagrionidae
				1	Limnophora
Flannelmouth sucker	351	345	<10	46	Chironomidae
				9	Chironomidae pupae
				2	Isoperla
				2	Baetidae
				7	Hydropsychidae
				2	Hydroptila
				15	Ephemerella
				2	Acari
Flannelmouth	350	284	<10	25	Chironomidae
				6	Chironomidae pupae
				2	Ceratopogonidae

RBOSP PROGRESS REPORT

APPLNDIX B-14-11 (Continued)

Station 28, Replicate 1, 4-22-75 (Continued)

Specie	Length (mm)	Weight (gm)	Fullness	#	Food Items Type
				2	Isoperla
				13	Hydropsychidae
				2	Baetidae
				1	Nematoda
				8	Ephemerella

Station 28, Replicate 2, 4-22-75

Rainbow trout	432	585	75	2	Simuliidae
				3	Isoperla
				17	Limnophora
				1	Dytiscidae adult
				5	Corixidae
				4	Tabanidae
				1	Aeshnidae
				4	Baetidae
				38	Coenagrionidae
				5	Ephemerella
Rainbow trout	142	24	75	1	Chironomidae
				7	Simuliidae
				1	Isoperla
				4	Baetidae
				3	Ephemerella
				2	Tipulidae
				2	Coenagrionidae
Rainbow trout	242	115	75	2	Chironomidae
				2	Simuliidae
				1	Isoperla
				1	Dytiscidae adult
				1	Tabanidae
				1	Tabanus
				2	Limnophora
				9	Coenagrionidae
				2	Corixidae adult
				1	Baetidae adult
				1	Formicidae
				1	Baetidae
				3	Ephemerella

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Station 29, Replicate 1, 4-21-75

Species	Length (mm)	Weight (gm)	%Fullness	Food Items #	Type
Flannelmouth sucker	439	792	<10	5	Chironomidae
				1	Chironomidae pupae
				1	Ceratopogonidae
				1	Plecoptera
				12	Isoperla
				9	Baetidae
				1	Hydropsychidae
				4	Rhithrogena
				9	Ephemerella
Flannelmouth sucker	474	945	<10	28	Chironomidae
				1	Ceratopogonidae
				1	Simuliidae
				39	Isoperla
				64	Baetidae
				2	Hydropsychidae
				11	Rhithrogena
				19	Ephemerella
				1	Brachyptera
Mottled sculpin	92	13.0	100	3	Plecoptera
				1	Megadrile
Mottled sculpin	102	18.1	100	1	Plecoptera
				4	Coleoptera
					Insect parts
Mottled sculpin	72	5.6	100	4	Chironomidae
				5	Baetis
				1	Rhithrogena
				4	Perlodidae
Mottled sculpin	73	5.6	100	26	Baetis
				3	Chironomidae
				2	Ephemerella
				3	Isoperla
					Insect parts
Mottled sculpin	62	4.5	80	4	Isoperla

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Station 29, Replicate 1, 4-21-75 (Continued)

Species	Length (mm)	Weight (gm)	Fullness	#	Food Items Type
Mottled sculpin	83	8.9	100	3	Isoperla
				1	Hydropsyche
				1	Ephemerella
				6	Baetis
				1	Chironomidae
					Insect parts
Mottled sculpin	70	5.6	100	12	Isoperla
				3	Ephemerella
				4	Baetis
				1	Heptageniidae
					Insect parts
Mottled sculpin	70	5.9	100	3	Isoperla
				3	Baetis
				1	Chironomidae
					Insect parts
Mottled sculpin	67	4.1	90	3	Baetis
				2	Isoperla
				1	Ephemerella
					Insect parts
Mottled sculpin	66	4.9	100	2	Isoperla
				1	Ephemerella
				11	Baetis
					Insect parts
Mottled sculpin	60	4.1	100	1	Isoperla
				8	Baetis
				1	Ephemerella
					Insect parts
Mottled sculpin	62	3.4	100		Insect parts
Mottled sculpin	66	4.5	90	1	Ephemerella
				3	Baetis
					Insect parts
Mottled sculpin	69	4.9	90	1	Isoperla
				5	Baetis
					Insect parts

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Station 29, Replicate 1, 4-21-74 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	#	Food Item Type
Mottled sculpin	58	3.2	100	9	Baetis
				1	Ephemerella
				6	Isoperla
Mottled sculpin	54	2.8	90	3	Baetis
					Insect parts
Mottled sculpin	63	4.0	90	4	Baetis
				2	Chironomidae
				2	Ephemerella
					Insect parts

Station 29, Replicate 2, 4-21-75

Mottled sculpin	98	14.2	100	1	Hydropsyche
				1	Ephemerella
				2	Isoperla
					Insect parts
Mottled sculpin	88	13.6	90	1	Isoperla
					Insect parts
Mottled sculpin	71	6.9	100	6	Isoperla
				1	Ephemerella
				5	Baetis
					Insect parts
Mottled sculpin	66	4.9	100	5	Baetis
				2	Isogenus
					Insect parts
Mottled sculpin	65	4.1	Empty		---
Mottled sculpin	57	2.9	50		Insect parts
Mottled sculpin	60	3.1	90		Insect parts
Mottled sculpin	56	2.5	90	5	Ephemeroptera
					Insect parts

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	#	Food Items Type
Station 30, Replicate 1, 4-23-75					
No fish observed					
Station 30, Replicate 2, 4-23-75					
Flannelmouth sucker	383	487	75	240	Chironomidae
				8	Chironomidae pupae
				32	Ceratopogonidae
				4	Isoperla
				4	Baetidae
				8	Hydropsychidae
				4	Baetidae adult
				4	Acari
Flannelmouth sucker	382	468	25	114	Chironomidae
				9	Chironomidae pupae
				6	Ceratopogonidae
				5	Isoperla
				7	Baetidae
				3	Hydropsychidae
				4	Tricorythodes
				69	Ephemerella
Station 31, Replicate 1, 4-23-75					
Flannelmouth sucker	400	558	50	209	Chironomidae
				18	Chironomidae pupae
				4	Ceratopogonidae
				3	Isoperla
				11	Baetidae
				9	Hydropsychidae
				1	Hydropsyche
				1	Hydroptila
				2	Tricorythodes
				51	Ephemerella
Flannelmouth sucker	318	228	75	724	Chironomidae
				28	Chironomidae pupae
				8	Ceratopogonidae
				20	Baetidae
				8	Hydropsychidae
				8	Hydropsyche
				4	Pyralidae

RBOSP PROGRESS REPORT

APPENDIX B-14-II (Continued)

Species	Length (mm)	Weight (gr)	Fullness	#	Food Items Type
Station 31, Replicate 1, 4-23-75 (Continued)					
				4	Rhithrogena
				4	Tricorythodes
				72	Ephemerella
Station 31, Replicate 2, 4-23-75					
No fish observed					
Station 32, Replicate 1, 4-23-75					
Flannelmouth sucker	210	70	10	208	Chironomidae
				1	Chironomidae pupa
				6	Baetidae
				8	Ephemerella
Flannelmouth	215	83	50	67	Chironomidae
				3	Chironomidae pupae
				20	Baetidae
				7	Ephemerella
Flannelmouth sucker	346	343	50	78	Chironomidae
				5	Chironomidae pupae
				2	Ceratopogonidae
				1	Isoperla
				9	Baetidae
				3	Hydropsychidae
				1	Hydroptila
				1	Baetis
				28	Ephemerella
Mottled sculpin	100	17.8	90	3	Perlodidae
				1	Hydropsyche
				5	Baetis
					Insect parts
Mottled sculpin	70	5.3	90		Insect parts
Station 32, Replicate 2, 4-23-75					
Flannelmouth sucker	416	660	50	240	Chironomidae
				8	Chironomidae pupae
				4	Ceratopogonidae
				4	Isoperla

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	#	Food Items Type
					Station 32, Replicate 2, 4-23-75 (Continued)
				24	Baetidae
				44	Hydropsychidae
				4	Hydroptila
				16	Rhithrogena
				8	Tricorythodes
				120	Ephemerella
					Station 33, Replicate 1, 4-25-75
Flannelmouth sucker	340	353	50	39	Chironomidae
				10	Chironomidae pupae
				1	Ceratopogonidae
				3	Isoperla
				4	Baetidae
				10	Hydropsychidae
				1	Pyralidae
				24	Ephemerella
Flannelmouth sucker	480	1050	50	40	Chironomidae
				12	Chironomidae pupae
				4	Ceratopogonidae
				64	Isoperla
				4	Hydropsychidae
				152	Ephemerella
				4	Limnephilidae
Flannelmouth sucker	346	395	50	157	Chironomidae
				6	Chironomidae
				2	Ceratopogonidae
				3	Baetidae
				8	Hydropsychidae
				1	Rhithrogena
				4	Tricorythodes
				59	Ephemerella
Flannelmouth sucker	293	234	50	68	Chironomidae
				16	Chironomidae pupae
				4	Batidae
				4	Hydropsychidae
				1	Pyralidae
				1	Hydroptila
				1	Tricorythodes
				28	Ephemerella

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Station 33, Replicate 1, 4-25-75 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	Food Items #	Type
				1	Baetidae adult
				4	Acari
Flannelmouth sucker	356	339	50	29	Chironomidae
				8	Chironomidae pupae
				2	Simuliidae
				7	Isoperla
				16	Baetidae
				7	Hydropsychidae
				2	Hydropsyche
				2	Pyralidae
				26	Ephemerella
Flannelmouth sucker	273	193	50	55	Chironomidae
				16	Chironomidae pupae
				1	Baetidae
				1	Hydropsychidae
				1	Nematoda
				7	Ephemerella
Flannelmouth sucker	265	152	50	83	Chironomidae
				4	Chironomidae pupae
				1	Ceratopogonidae
				2	Hydropsychidae
				1	Hydroptila
				4	Ephemerella
				2	Acari
Flannelmouth sucker	263	147	50	28	Chironomidae
				13	Chironomidae pupae
				1	Simuliidae
				2	Isoperla
				7	Baetidae
				3	Hydropsychidae
				2	Pyralidae
				6	Ephemerella
Flannelmouth sucker	197	66	50	111	Chironomidae
				3	Chironomidae pupae
				1	Isoperla
				5	Baetidae
				2	Hydropsychidae
				1	Hydroptila
				3	Ephemerella

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Station 33, Replicate 1, 4-25-75 (Continued)

Species	Length (mm)	Weight (gm)	%Fullness	#	Food Items Type
Flannelmouth sucker	197	66	50	47	Chironomidae
				9	Chironomidae pupae
				2	Ceratopogonidae
				1	Isoperla
				8	Baetidae
				4	Hydropsychidae
				1	Pyralidae
				2	Hydroptila
				10	Ephemerella
				1	Gomphidae
				1	Formicidae
Flannelmouth sucker	209	69	25	35	Chironomidae
				10	Chironomidae pupae
				1	Isoperla
				2	Baetidae
				1	Nematoda
				6	Ephemerella

Station 33, Replicate 2, 4-25-75

No fish observed

Station 34, Replicate 1, 4-25-75

Flannelmouth sucker	431	768	50	48	Chironomidae
				4	Chironomidae pupae
				12	Isoperla
				11	Baetidae
				8	Nematoda
				8	Baetis
				12	Rhithrogena
				148	Ephemerella

Station 34, Replicate 2, 4-25-75

No fish observed

RBOSP PROGRESS REPORT

APPENDIX B-14-11 (Continued)

Station 35, Replicate 1, 4-25-75

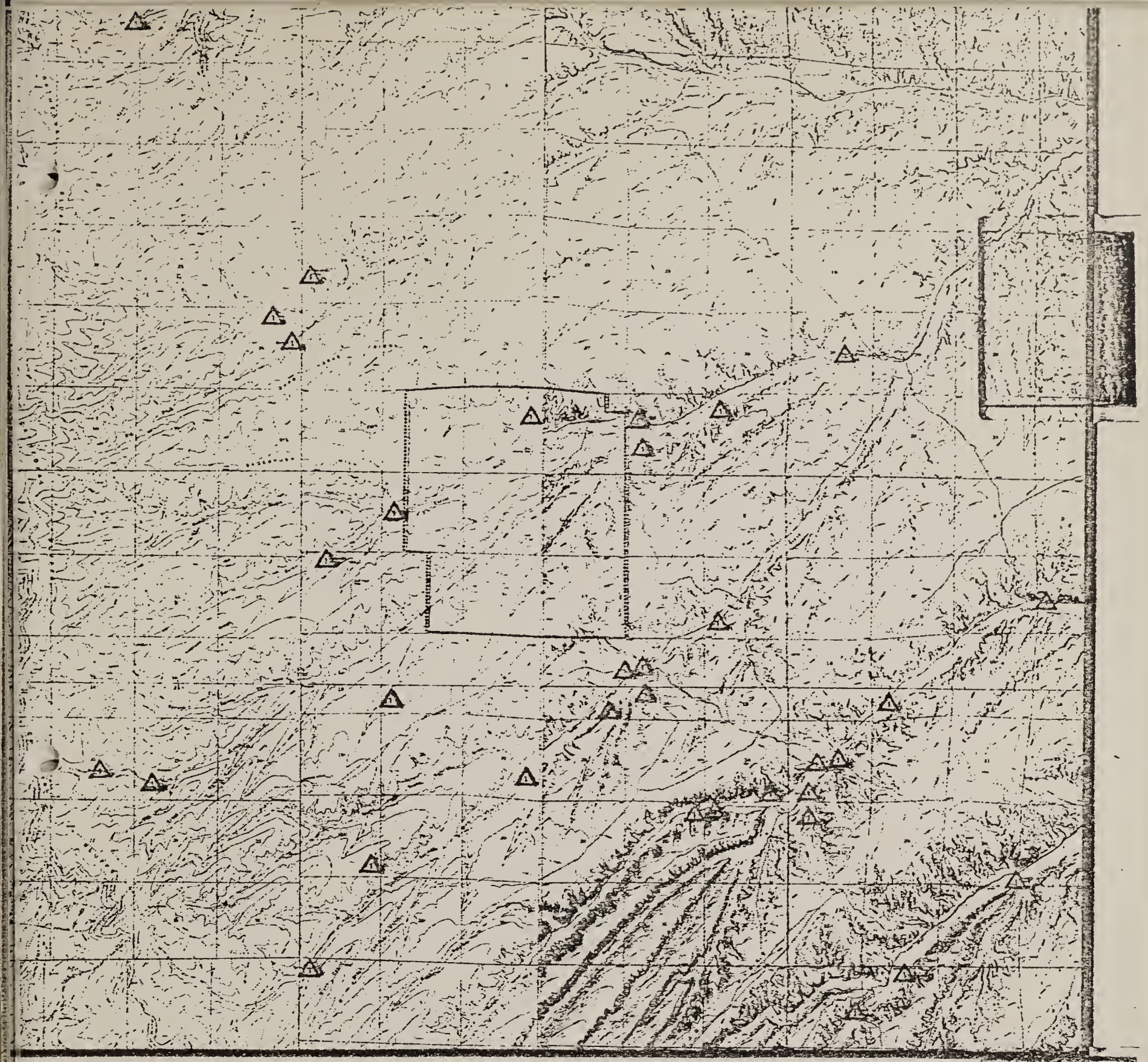
Species	Length (mm)	Weight (gm)	%Fullness	Food Items #	Food Items Type

No fish appropriate for stomach analysis.

Station 35, Replicate 2, 4-25-75

No fish appropriate for stomach analysis.

RBOSP PROGRESS REPORT


ENVIRONMENTAL
STUDIES FOR THE
RIO BLANCO OIL SHALE PROJECT
TRACT C-a
SPRING & SEEPAGE LOCATIONS
springs and seepages as of 5/75
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LIMNETICS, INC.
Denver, Colorado
5/75
MILES
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Figure 2.4-2

2.4.10 Hydrology

Table 2.4-4. List of Parameters and Sampling Frequency for Water Quality Investigations.

Semi-Monthly	Semi-Monthly[1]
Element or Compound	Element or Compound
Barium	Arsenic
Boron	Cadmium
Calcium	Lead
Chromium	Manganese
Copper	Mercury
Fluoride	Phosphorus
Iron	Cyanide
Lithium	Sulfide
Magnesium	
Potassium	
Selenium	
Silicon	
Sodium	
Sulfate	
Zinc	
Ammonia	
Bicarbonate	
Carbonate	
Chloride	
Color	
Dissolved solids	
Kjeldahl nitrogen	
Nitrate	
Nitrite	
Odor	
Oil and Grease	
Turbidity	

[1]Subject to review

Table 2.4-4. (Continued)

Quarterly		
Organics	Radioactivity	Element or Compound
Total organic C · if < 10mg/l no additional analysis	Gross Alpha > 4 picocuries/l analyze for RA 226	Complete Element Scan
· if > 10mg/l then, Dissolved organic C Suspended organic C Phenols Sulfate Nitrogen	Gross Beta · if > 100 picocuries/l analyze for Th 230 and Natural Uranium	
Chemical oxygen demand		
Fecal coliform		
Pesticides		

APPENDIX B-15-1

STREAM FLOW VELOCITY
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-15-1

STREAM FLOW VELOCITY, RBOSP AQUATIC BASELINE STUDIES, APRIL 1975
(Results are expressed in feet per second and, where appropriate, are given for bank sides and point of maximum flow.)

Station	Flow Velocity (ft/sec)
1	0.1(1/sec)
2	0.8
3	0.4
4	0.5
5	0.9;0.3
7	0.5
8	1.0
9	1.7
13	1.0
14	0.5
19	2.4
20	1.6;1.0
21	1.3;1.7
22	1.3;0.4
23	1.2;3.5
24	1.7;2.0;3.8
25	3.8;3.6;3.0
26	3.0;2.8;2.5
27	0.4;1.2
28	1.9;1.9
29	1.9;3.6
30	1.3;2.2;2.2
31	2.3;2.5;2.4
32	2.4;2.0;1.0
33	1.4;2.5
34	3.5;2.5
35	4.6;2.7

[1]Stations 6, 10 - 12, and 15 - 18 were dry at the time of sampling

2.4.11 Miscellaneous Studies

APPENDIX B-16-1

WATER QUALITY DATA
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-16-1

WATER QUALITY DATA. RBOSP AQUATIC BASELINE STUDIES
APRIL 1975. (Data are expressed in mg/l unless otherwise noted.)

PARAMETER	STATION REPLICATE			
	25		34	
	A	B	A	B
Arsenic (As), Diss[1]	<0.01	<0.01	<0.01	<0.01
Barium (Ba), Diss	<0.1	<0.1	<0.1	<0.1
Boron (B) , Diss	<0.5	<0.5	<0.5	<0.5
Cadmium (Cd), Diss	<0.01	<0.01	<0.01	<0.01
Carbon (C) Organic	14	14	14	9
Carbon (C) Organic Diss	12	11	12	10
Carbon (C) Organic Suspended	2	3	2	1
Chemical Oxygen Demand (O_2)	23	22	17	17
Chromium (Cr) Total Diss	<0.03	<0.03	<0.03	<0.03
Copper (Cu), Diss	0.03	<0.02	<0.02	<0.02
Cyanide (Cn), Total	<0.001	<0.001	<0.001	0.001
Fluoride (F), Diss	0.48	0.72	0.72	0.68
Iron (Fe), Total Diss	0.02	0.02	0.02	0.02
Lead (Pb) Diss	<0.05	<0.05	<0.05	<0.05
Lithium (Li) Diss	0.02	0.02	0.02	0.02
Manganese (Mn), Diss	<0.02	<0.02	<0.02	<0.02
Mercury (Hg), Diss (µg/l)	0.3	6.6	0.3	<0.3
Nitrogen (N), Organic	0.87	1.0	0.62	0.68
Phosphorus (P), Total Diss	0.03	0.04	0.02	0.03
Phenolic compounds	0.011	0.012	0.009	0.011
Selenium (Se), Diss	<0.01	<0.01	<0.01	<0.01
Solvent extract (Oil)	0.17	0.09	0.13	0.16
Sulfate (S), Diss	53	56	51	51
Sulfide (S), Diss	<0.02	<0.02	<0.02	<0.02
Sulfur (S), Organic	1	<1	2	<1
Zinc (Zn), Diss	<0.02	0.02	<0.02	<0.02
Gross Alpha (α) pCi/l	1.2±0.8	1.2±0.8	1.3±0.8	0.83±0.65
Gross Beta (β) pCi/l	10.1±1.6	9.4±1.5	9.4±1.5	8.0 ± 1.4

[1]Diss = Dissolved

APPENDIX B-16-2

FECAL COLIFORM BACTERIA ANALYSES
RBOSP AQUATIC BASELINE STUDIES
APRIL 1975

APPENDIX B-16-2

FECAL COLIFORM RESULTS ARE PRESENTED AS COLONIES/100 ml

Station-Replicate	Colonies/100 ml
25-A	80
25-B	50
34-A	50
34-B	50

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